

L Number	Hits	Search Text	DB	Time stamp
1	820	affinity near group or (employee or group) near (discount or markdown or mark adj down)	USPAT	2004/01/21 15:15
2	(17)	(affinity near group or (employee or group) near (discount or markdown or mark adj down)) and (e or electronic or internet or online or on adj line) near (commerce or shop or shopping or buying or purchasing or marketplace or market or store)	USPAT	2004/01/21 15:19
3	(5)	6269343.URPN.	USPAT	2004/01/21 13:30
4	(57)	("3581072" "4567359" "4789928" "4949248" "5148365" "5255184" "5270921" "5377095" "5576951" "5640569" "5712985" "5724521" "5727165" "5729700" "5745882" "5758327" "5758328" "5765143" "5794207" "5794219" "5797127" "5799284" "5806047" "5809144" "5818914" "5826244" "5832459" "5835896" "5842178" "5845265" "5845266" "5890137" "5890138" "5895454" "5897639" "5913210" "5915209" "5950176" "5956709" "5983199" "6014644" "6021398" "6026383" "6035288" "6041308" "6055504" "6067528" "6076070" "6078897" "6081789" "6085169" "6101484" "6119101" "6141653" "6260024" "6269343" "6332129").PN.	USPAT USPAT	2004/01/21 13:38
5	(7)	buyers adj club and (e or electronic or internet or online or on adj line) near (commerce or shop or shopping or buying or purchasing or marketplace or market or store)	USPAT	2004/01/21 14:24
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7	(6)	employee adj discount	USPAT	2004/01/21 15:18
8	973	wholesale and retail	USPAT	2004/01/21 15:18
9	(92)	(wholesale and retail) and (e or electronic or internet or online or on adj line) near (commerce or shop or shopping or buying or purchasing or marketplace or market or store)	USPAT	2004/01/21 14:36
10	(3)	6266651.URPN.	USPAT	2004/01/21 15:10
11	(53)	("3581072" "4247759" "4270042" "4346442" "4449186" "4553222" "4674044" "4677552" "4739478" "4742457" "4751640" "4789928" "4799156" "4823265" "4876648" "4885685" "4903201" "4910676" "4992940" "5021953" "5063507" "5077665" "5101353" "5136501" "5168446" "5191613" "5193056" "5206803" "5235680" "5237500" "5239462" "5243515" "5258908" "5262942" "5283731" "5285383" "5305200" "5323315" "5325297" "5329589" "5347306" "5375055" "5394324" "5424944" "5426281" "5451998" "5465291" "5526479" "5557518" "5561707" "5664111" "5771354" "5845265").PN.	USPAT USPAT	2004/01/21 15:11
12	344	affinity near group or (employee or group) near (discount or markdown or mark adj down)	EPO; JPO; DERWENT; IBM_TDB	2004/01/21 15:15
13	(3)	(affinity near group or (employee or group) near (discount or markdown or mark adj down)) and (e or electronic or internet or online or on adj line) near (commerce or shop or shopping or buying or purchasing or marketplace or market or store)	EPO; JPO; DERWENT; IBM_TDB	2004/01/21 15:17

14	0	buyers adj club and (e or electronic or internet or online or on adj line) near (commerce or shop or shopping or buying or purchasing or marketplace or market or store)	EPO; JPO; DERWENT; IBM_TDB	2004/01/21 15:18
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16	232	wholesale and retail	EPO; JPO; DERWENT; IBM_TDB	2004/01/21 15:18
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US005319542A

United States Patent [19]

King, Jr. et al.

[11] **Patent Number:** 5,319,542[45] **Date of Patent:** Jun. 7, 1994[54] **SYSTEM FOR ORDERING ITEMS USING AN ELECTRONIC CATALOGUE**[75] **Inventors:** John E. King, Jr., Warrenton; John R. Nilsen, Reston, both of Va.[73] **Assignee:** International Business Machines Corporation, Armonk, N.Y.[21] **Appl. No.:** 589,353[22] **Filed:** Sep. 27, 1990[51] **Int. Cl.:** G06F 15/22[52] **U.S. Cl.:** 364/401; 364/408[58] **Field of Search:** 364/401, 408, 406; 235/383; 379/90[56] **References Cited****U.S. PATENT DOCUMENTS**

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Primary Examiner—Roy N. Envall, Jr.*Assistant Examiner*—Khair Tran*Attorney, Agent, or Firm*—Jesse L. Abzug; Lauren C. Bruzzone

[57]

ABSTRACT

The disclosed system facilitates the user in electronically ordering items from suppliers. The system is comprised of an Electronic Catalogue and an Electronic Requisition facility. The Electronic Catalogue includes a Public Catalog and a Private Catalogue. The Public Catalog is stored on a publicly available database for access by customer/Requestors. The Private Catalogue is resident on a Customer's computer system and may contain unique pricing data based on pricing agreements. The Electronic Requisition facility is used by the Customer/Requestors to electronically create purchase requisitions based upon the information provided in the catalogues and route the requisitions through the appropriate approval process within the enterprise. Requisitions are then processed through the customer's procurement system and transmitted electronically as purchase orders to Suppliers.

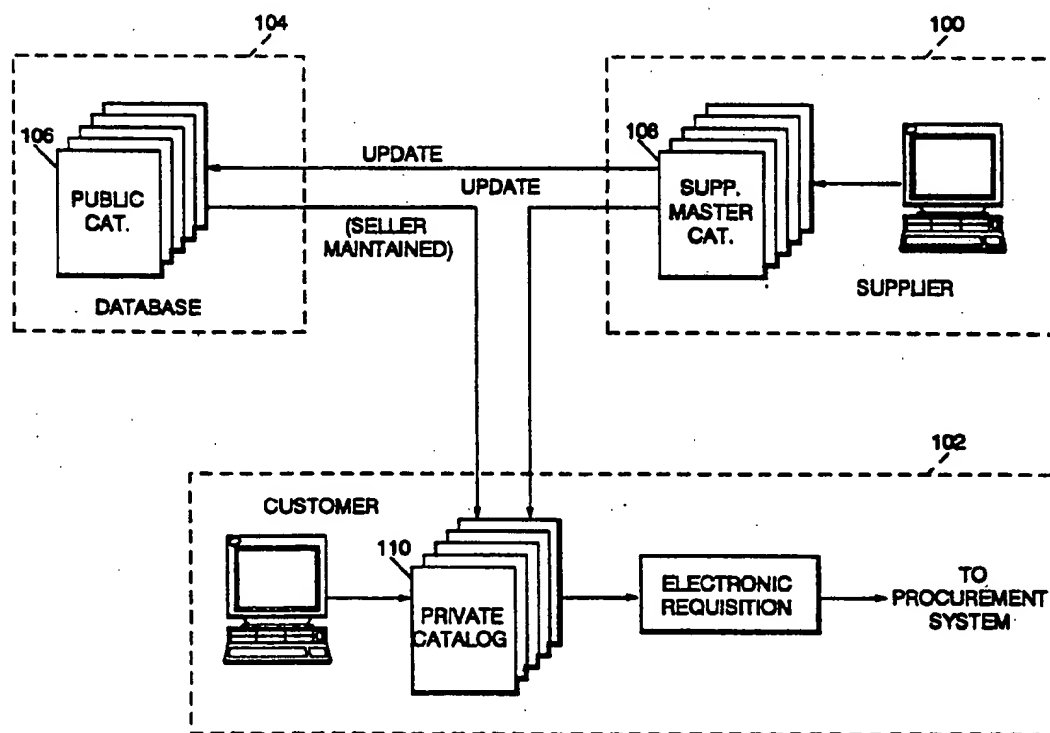
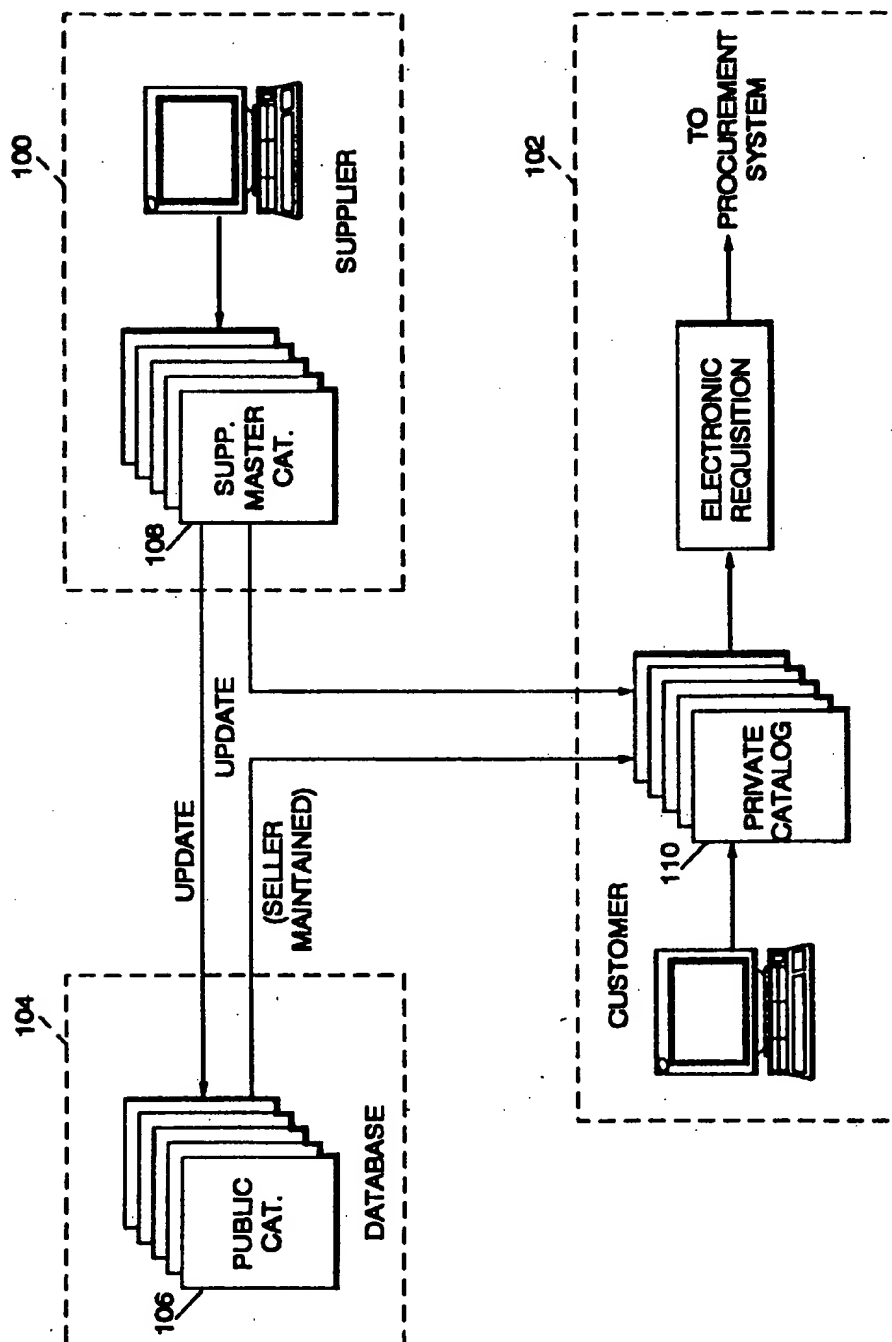
14 Claims, 4 Drawing Sheets

FIG. 1



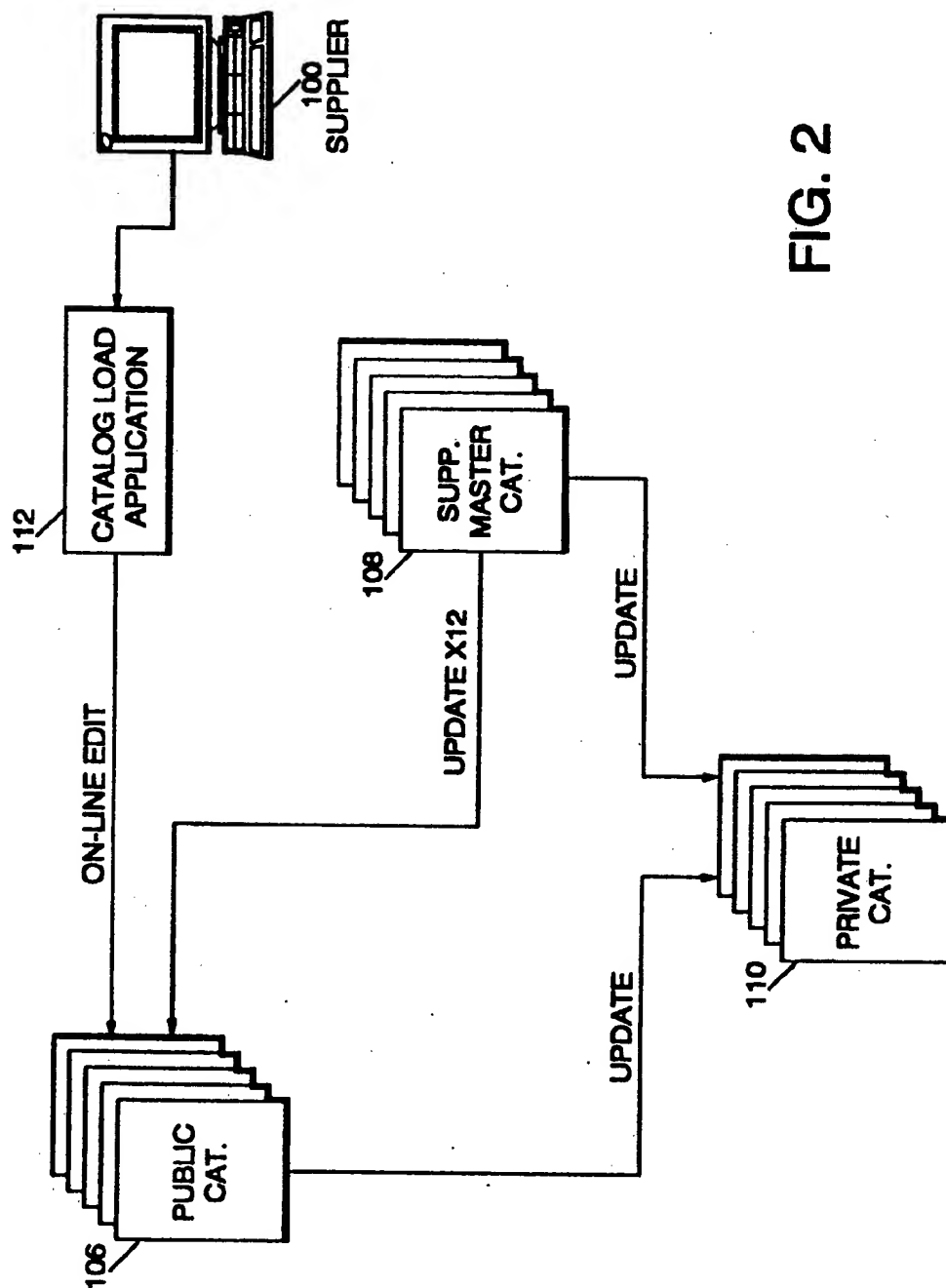
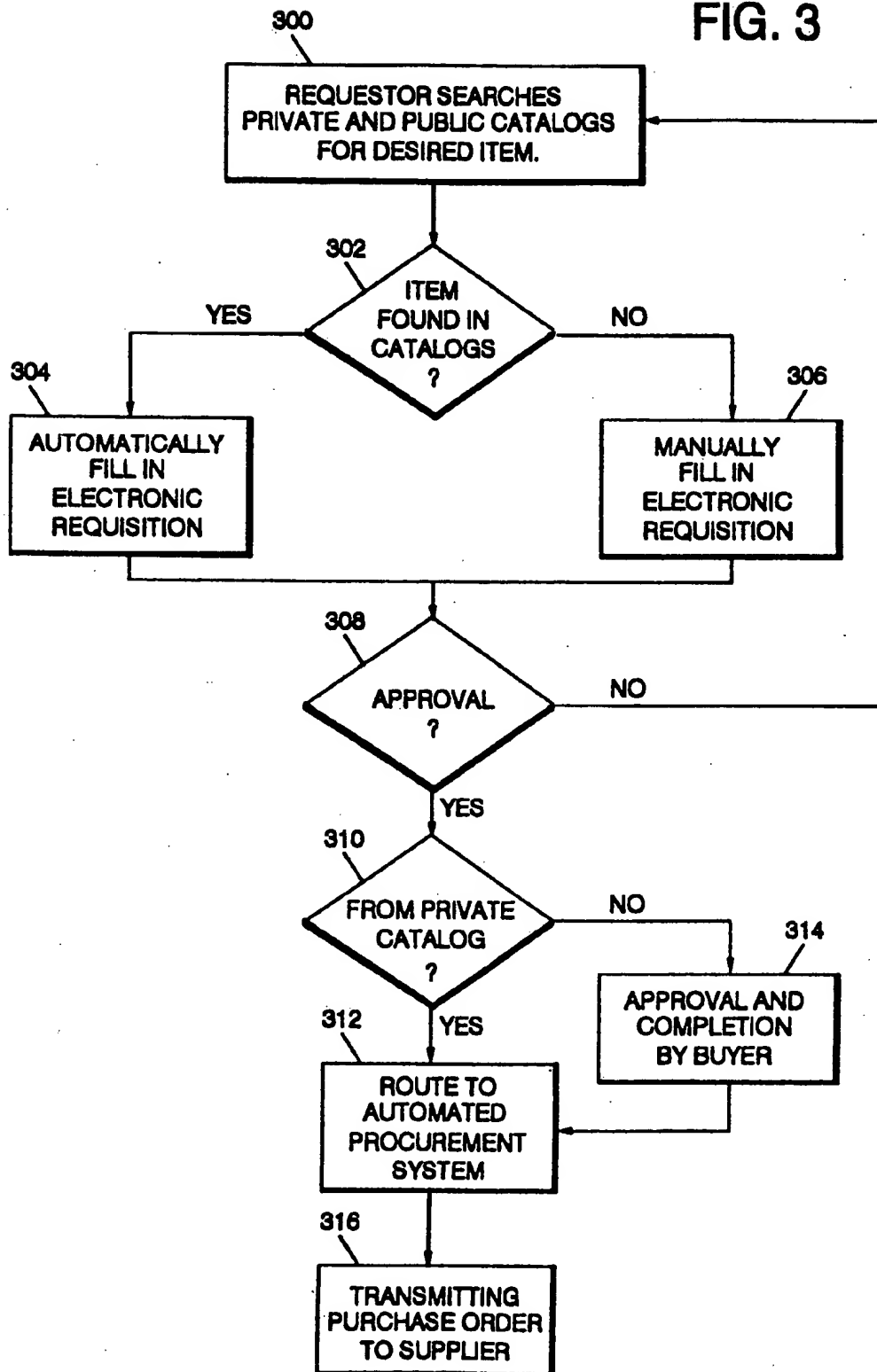
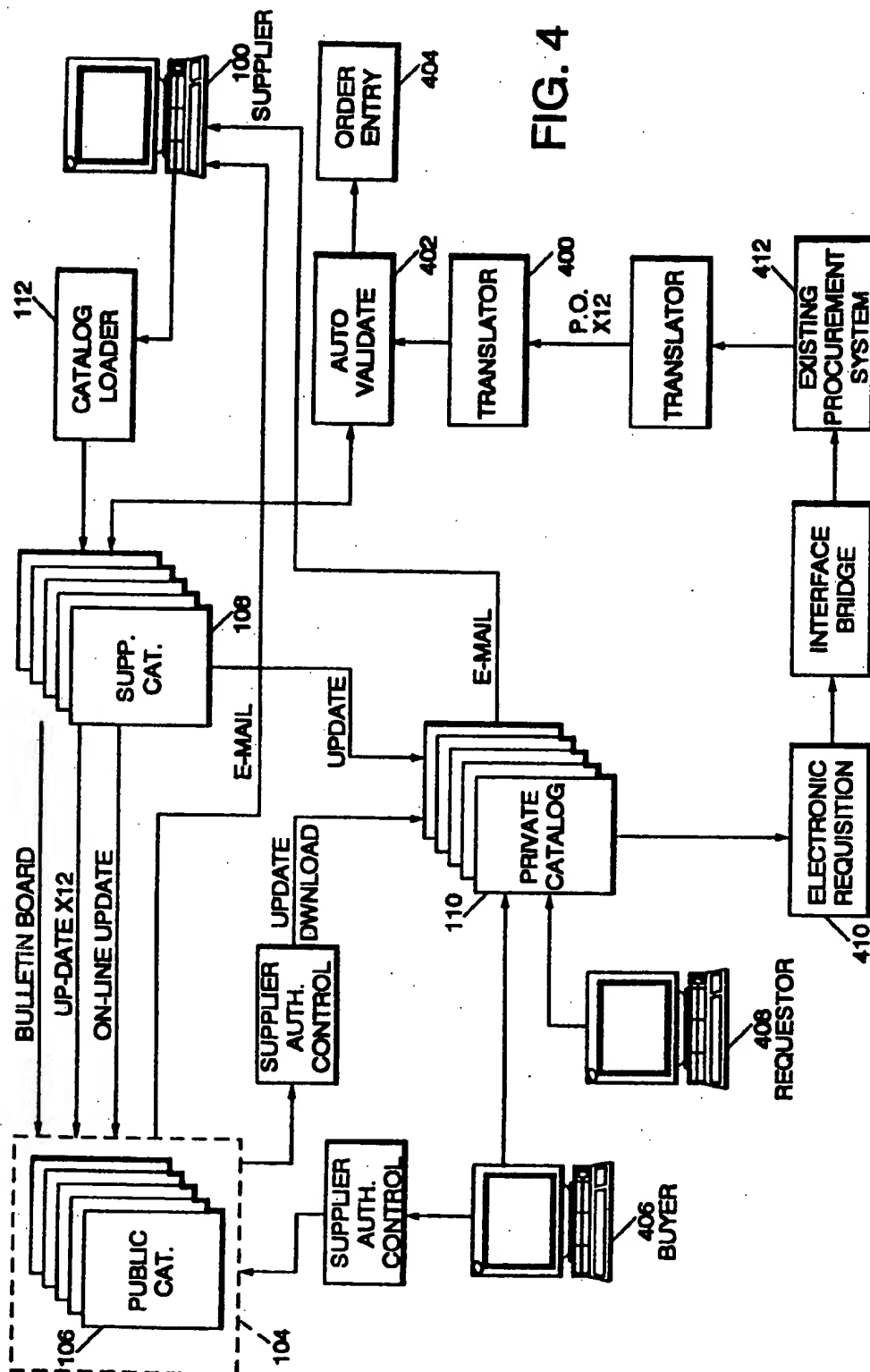


FIG. 2

FIG. 3





SYSTEM FOR ORDERING ITEMS USING AN ELECTRONIC CATALOGUE

BACKGROUND INFORMATION

1. Field of the Invention

This invention relates to a method and system for facilitating the ordering of items from suppliers. In particular, an electronic catalog requisition system and method is disclosed.

2. Background Art

Traditionally, procurement systems have been manual, labor intensive and costly operations. For example, a supplier would do mass mailings of catalogs to potential customers; the customers would browse the catalogs and select items to be purchased; and then the customer would complete a paper order form, or call the supplier to order the items. The entire process, from preparing the catalog to receipt of orders, often took several weeks, and possibly months. If a supplier wanted to continually update his catalogs, or provide different price schedules to different customers, the printing, distribution and administrative burden would be even more tremendous.

On a relatively small scale, some suppliers have offered catalogs through computer services, such as PRODIGY (a registered trademark of Prodigy Services Corp.). With PRODIGY, a computer user can dial-up a service from home and select items to purchase from various catalogs maintained on the system. Upon selection, PRODIGY initiates the order with the supplier.

While this has improved upon some of the disadvantages in typical procurement situations, there are still problems remaining that have yet to be solved. One such drawback is that PRODIGY does not provide the purchaser a competitive shopping tool. Comparative information on products offered by various suppliers is not simultaneously displayed, which would facilitate item selection.

Another drawback is that PRODIGY is not integrated with the industrial customer's procurement system, though its use is not limited to home customers. Still another drawback is that PRODIGY does not permit customers to maintain "Private Catalogs" on their own computer systems. Private Catalogs permit individual customers to control or limit the products or services, as desired by the customer. Private Catalogs also allow separate pricing structures for different customers based upon negotiated agreements with suppliers, as well as permit large corporations to maintain listings (catalogs) of surplus items available to its employees.

OBJECTS OF THE INVENTION

Therefore, it is an object of this invention to provide a new electronic procurement/requisition system and method which allow a purchaser's requisition system to be integrated with a catalog system, and a supplier computer system.

It is another object of this invention to provide an electronic requisition system which includes public and private catalogs.

It is another object of this invention to provide an electronic requisition system which allows individual customers to control the products and suppliers that may be ordered.

It is still another object of this invention to provide an electronic catalog ordering system that allows the simultaneous display of competitive product information.

It is still another object of this invention to provide private catalogs that are supplier maintained through access to the public catalog, thus significantly reducing customer maintenance of their private catalogs.

It is another object of this invention to provide an electronic catalog ordering system which includes direct catalog maintenance by suppliers.

SUMMARY OF THE INVENTION

These objects, and many more features and advantages as will be shown further, are accomplished by the electronic catalog ordering process and system herein described. The system comprises two major components: 1) the Electronic Catalogs, and 2) the Electronic Requisition.

The first Electronic Catalog segment consists of a Supplier Master Catalog which is maintained by each Supplier. It is used as the basis for the second Electronic Catalog segment, consisting of the Public Catalog and the Private Catalog.

The Public Catalog permits multiple customers to access and identify products from a variety of Suppliers. The Public Catalog contains the following functional features: Catalog Query/Display for logically guiding the requestors through the available catalog data; a Customer preferred path controller which directs the user to preferred Supplier catalogs thereby permitting customers to select products at prenegotiated discounts; a catalog finder which provides efficient search routines to locate Supplier catalogs card items within; a price discounter which automatically translates retail prices to specific customer contracted discount prices; customer shopping lists; Supplier authorization control; and the ability to permit Customers' procurement personnel to locate available supplier products and services required to satisfy requestor needs, as well as, provide supplier catalog data for initial load and maintenance of the Customers' private catalogs.

The Private Catalog functions allow Customers to load, access and identify supplier products on their own local computer systems rather than the Public Catalog. Private Catalogs contain many of the same features as the Public Catalogs, except for the price discounter function which is not required since the data base of the Private Catalog is customer specific.

The Electronic Requisition automates all manual transactions currently experienced in generating and processing hardcopy requisitions, including the approval process. Customization via automatic routing tables allow each Customer site to control requisition routing.

The electronic ordering method allows Suppliers to create machine readable forms of their Feaster Catalogs and transmit them to a public database as Public Catalogs, and to Customers as Private Catalogs, either directly or via the public database. The Customer, in turn, would then search the Catalogs for items to be purchased, load pertinent ordering information into an electronic requisition, and send electronic Purchase Orders for the items to the Suppliers.

BRIEF DESCRIPTION OF THE DRAWING

The foregoing and other advantages of the invention will be more fully understood with reference to the

description of the preferred embodiment and with reference to the drawing wherein:

FIG. 1 is a block diagram showing the electronic catalog relationships.

FIG. 2 is a detailed diagram of the Catalog Loader function.

FIG. 3 is a block diagram showing the requisition process.

FIG. 4 is a detailed block diagram of the Electronic Catalog Ordering System.

DESCRIPTION OF THE PREFERRED EMBODIMENT

General Concept

The electronic catalog ordering process and system provide an automated facility for procuring standard commercial parts and services. The two major components are: (1) the Electronic Catalog which permits on-line access to Suppliers' catalogs of products and services; and (2) the Electronic Requisition which automates the hardcopy requisition and its approval process. The interactive, electronic coupling of these 2 major components enable a Requestor to complete a purchase request during one system session. These two major components are distributed among the three principal players in the system, as described in further detail below.

Referring to FIG. 1, the electronic catalog ordering system involves three principal players, the Suppliers, designated by block 100; the Customers/Requestors, designated by block 102, and the Public Database, designated by block 104. The Suppliers 100 load and maintain the catalog data of the products and/or services that they offer to the Customers 102. The Customers/Requestors 102 are those who purchase products and/or services from the catalogs. The owners of the Public Database 104 develop, maintain and provide a host operating environment where the Public Catalog 106 resides.

The Electronic Catalog, in its full function configuration, consists of three functionally distinct catalogs. The Supplier 10 Master Catalog 108 is the catalog which contains the master information for all of the Suppliers' products and services. It is loaded and maintained by Suppliers 100 on their own local computer systems. From the Supplier Master Catalog 108, each Supplier 100 creates a Public Catalog 106 and sends it to the Public Database 104. The Public Catalogs 106 from many Suppliers 100 are loaded and maintained on a Public Database for access by Customers 102.

Suppliers also may create Private Catalogs 110 from the Supplier Master Catalogs 108 and from the Public Catalog 106. The Private Catalogs 110 are then loaded and maintained by Customers 110 on their own local computer systems for access by Customer employees. Private Catalogs 110 may also be maintained by Suppliers 100.

Electronic Catalog

Referring to FIG. 2, the Electronic Catalog consists of the Supplier Master Catalog 108, the Public Catalog 106 and the Private Catalog 110. The Supplier Master Catalog 108 is defined as a special catalog separately owned and maintained by Supplier for the purposes of building, storing and maintaining his catalog data prior to transmittal as a Public Catalog 106 or Private Catalog 110. The loading of the Public Catalog 106 is accom-

plished by loading the entire catalog, selected catalog commodity groups, or individual catalog items.

The Public Catalog 106 is defined as cross-industry catalogs resident on a third party network, for access by multiple customers. The loading and updating of the public cross-industry sector catalogs is accomplished by Suppliers whose catalog data is loaded using one of the following methods:

- A) batch ANSI X12 (832) business transactions for initial loading or mass updates;
- B) real-time, on-line access for low volume or emergency updating;
- C) a tape dump, CD-ROM load, etc. of the Supplier Master Catalog 108.

The Private Catalog 110 is defined as a special catalog separately owned by the Customer and distinct from that of the Public Catalog 106. This catalog most likely would be resident on a Customer's local host computer system. Customers can store catalog items in Private Catalogs where there are volume purchase agreements, corporate contract discounts, preferred suppliers, control items, special trading partners, etc. The goal of the Private Catalog 110 is to provide customers with competitive sourcing solutions. Private catalog loading is obtained by either;

- A) periodic direct downloading from the Public Catalog 106;
- B) direct input from the Supplier database; or
- C) created by the Customer.

The Private Catalog 110 can reside on a Customer's host computer system, or on a public network, and can be maintained by Customers or Suppliers.

The loading and maintenance of the Supplier Master Catalog 108 is facilitated by a Catalog Loader Program (Cata-Loader) 112. The following is a list of functional features of Cata-Loader Program 112:

- A. Create New Catalog
- B. Catalog Set-up Profile
- C. Catalog Maintenance/Update
- D. Catalog Bulletin Maintenance
- E. Customer Access/Download Control
- F. Customer Access Data Reports
- G. Catalog Review Session
- H. Public Catalog Load/Maintenance
- I. Private Catalog Load/Maintenance

The Create New Catalog function permits a Supplier to create a catalog. The Catalog Set-up Profile function allows a Supplier to set-up a profile relating to his own business information which would eliminate the need to provide common information more than once. The type of data that falls into this category would include: supplier number, address, telephone number, contracts, business class, class of trade, fax number, DUNS number, etc. The Catalog Maintenance/Update function allows the addition of catalog items and includes the following fields: item name, commodity code, part numbers, description, prices, units of measure, package quantities, lead times, discounts, stock availability, etc. The Catalog Bulletin Maintenance feature allows a Supplier to provide general information to the Customer subscribing to its electronic catalogs. Announcements would include new product announcements, special promotions, price changes, recalls, etc. All bulletins generated by the Suppliers are classified into one of the above categories to permit Customers to have control over the types of bulletins propagated to their Requestors.

discounts

controlled access

The Customer Access/Download Control function permits catalog Suppliers to control Customers' access to and downloading of Supplier maintained catalog data on the Public Catalog. This aids Suppliers in controlling where, and to whom, their product/pricing information is made available. Customer access control provides a mechanism for catalog Suppliers to control Customer access to their database. When invoked, this would inhibit/permit specific users access to the catalog information. Customer Download Control provides a mechanism for catalog Suppliers to authorize Customers to download catalog data to another host computer system. The Customer Access Data Reports function allows a Supplier to get reports on catalog usage and can be a very useful marketing aid. Comparisons of access time, market share, etc. are valuable features.

The initial loading or mass updates to the Public Catalog 106 are performed using EDI ANSI X12 832 business transactions. Features allow the Supplier to load catalog items, load catalog changes, load by specified commodity, load by specified item part number.

The Private Catalog 110 can be updated by the Suppliers. Data items that could be customized include unit prices, discount, payment terms, usage fees, etc. Suppliers can issue separate batch transaction commands modifying the above fields and sending the modifications via an EDI 832 transaction update directly to the Customer computer system.

Electronic Requisition Process

The Electronic Requisition is an automated form residing on a computer system which is used to initiate the procurement process. It is intended for use by four primary groups, each of which has specific responsibilities with regard to the ordering process and completion of the requisition as further described below with reference to FIG. 3. All user groups will need access to terminals or personal computer workstations to access the mainframe application.

The Requester is the party who defines the need for a purchased item and has the responsibility for creating the purchase requisition. Through an application program, the Requester initiates the requisition by accessing the Public or Private Catalog to search for the item of interest (Block 300). If the item is found, the system will prefill the required fields of the requisition (Block 304). If the item is not in the Catalogs, the required data will have to be manually entered (Block 306). When utilizing the Private Catalog, the process becomes automatic since the source of the catalog item has been preapproved, and the order can be sent directly to the Supplier, without Buyer involvement, after approvals are obtained. Non-catalog purchases are routed and approved by the axle process, but the actual purchase transaction is completed by a buyer.

The validated requisition is then routed to the Approver (Block 308). The Approver will either reject it, which will bounce the requisition back to Block 300, or approve it. If approved the requisition will be routed to the company's procurement system (Block 312) for items ordered from the Private Catalog. For items not from the Private Catalog, the requisition goes to the Buyer for completion of the requisition and approval of the Supplier (Block 314).

The Buyer is the party in most companies who has been identified as the authorized agent to make purchases. The Buyer typically has responsibility for selecting where products may be purchased, as well as

establishing an acceptable price that will be paid. In the electronic processing environment, the Buyer may receive an individual purchase requisition from a Requestor once it has been routed through the approval process. The Buyer may access the Public or the Private Catalog as deemed necessary to perform the normal buying task. When items are selected from the Catalog, the requisition is prefilled with required data and only minimal additional data will be needed. If a non-catalog item is to be purchased, the Buyer will keyboard in the required data to complete the transaction. Once the requisition has been approved (if required), it will then be processed through the company's procurement system and a Purchase Order will be electronically sent to the Supplier (Block 316).

The Approver is the party that has the authority to validate the need for purchase, that funding exists, etc. This individual will be identified by the company, and system tables will autocratically route requisitions as they are processed by the Requestor.

The Application Administrator is the party assigned over-all responsibility for the maintenance and control of the electronic requisition process. There may be more than one area responsible for different portions of the system. For example, a database administrator may control the routing/approval process in all associated tables. A Procurement Administrator may typically control those areas that relate to the requisition requirements.

System Architecture

The detailed system architecture is shown in FIG. 4. The Supplier's computer system is preferably an IBM 3090 (IBM is a registered trademark of International Business Machines Corporation) mainframe computer with attached personal computer workstations. With this arrangement, Supplier 100 can maintain catalogs using the Catalog Loader facility 112. Supplier 100 can also receive, translate (Block 400), validate (Block 402) and enter orders (Block 404) into its existing order entry system.

The Public Database 104 also uses an IBM 3090 mainframe running the MVS operating system. It includes facilities for controlling and distributing catalog data via communication lines connected to Suppliers and Customers.

The Customer operating environment includes a mainframe computer such as the IBM 3090 or AS/400 (AS/400 is trademark to International Business Machines Corporation) with attached personal computer workstations. Buyers 406 and Requestors 408 all interface to the system via workstations. The Electronic Requisition 410, which is the output of the electronic catalog ordering system is tied into Customer's existing procurement system 412. Procurement systems and methods are well-known in the art and are beyond the scope of this invention.

Communications between the computer systems are best accomplished using industry standards such as American National Standard Institute (ANSI) X24. Details of this standard can be obtained directly from ANSI.

While the invention has been particularly shown and described with reference to a preferred embodiment thereof, it will understood by those skilled in the art that various changes in detail may be made therein without departing from the spirit, scope and teaching of the invention. Accordingly, the system and method herein

disclosed is to be considered merely as illustrative, and the invention is to be limited only as specified in the claims.

We claim:

1. A system for electronically ordering items comprising:
 - at least one supplier computer system, having means for creating and storing at least one catalog containing items offered by the supplier and means for accepting orders for items;
 - a public computer system containing a compilation of catalogs of items offered by the supplier;
 - means connecting said supplier computer systems and said public computer system for transferring catalog data to said public computer system to create a public catalog;
 - a first Customer/Requestor computer system containing a first private catalog and having means for accessing said catalogs on said public computer system, means for electronically ordering items directly from the supplier, and means for modifying said first private catalog; and
 - a second Customer/Requestor computer system containing a second private catalog and having means for accessing said catalogs on said public computer system, means for electronically ordering items directly from the supplier, and means for modifying said second private catalog so that said second private catalog is different from said first private catalog.
2. The system as claimed in claim 1 wherein said Customer/Requestor computer system further includes means for creating and routing an electronic requisition.
3. The system as claimed in claim 1 wherein said public computer system contains catalogs of items offered by a plurality of suppliers.
4. The system as claimed in claim 3 wherein said public computer system includes means for comparing items for the plurality of suppliers.
5. The system as claimed in claim 1 wherein said means for creating and storing at least one catalog include means for creating a public catalog and means for creating a private catalog.
6. The system as claimed in claim 1 wherein said means for electronically ordering items includes a procurement system connected to the supplier computer system's means for accepting orders.
7. The system as claimed in claim 1 wherein said supplier computer system further includes means for maintaining the public and private catalogs.
8. In an electronic catalog requisition system in which catalogs of items offered by suppliers are stored on a central catalog database system, a method for retrieving information relating to said items and electronically ordering items from suppliers comprising the following steps:

- searching the catalog database for information on a customer-selected item, said catalog database residing on a public computer system;
- downloading said information on said customer-selected item to a Customer/Requestor computer system;
- creating an electronic requisition using the Customer/Requestor computer system; and
- transmitting the electronic requisition to a supplier computer system.
9. The method as claimed in claim 8 wherein at least one of the catalogs is stored on the Customer/Requestor computer system and the step of searching the catalog database includes the step of searching the requestor computer system.
10. The method as claimed in claim 8 further includes the step of routing the electronic requisition to approvers.
11. A method for facilitating the ordering of items offered by a supplier comprising the following steps:
 - creating a machine readable catalog of information relating to items offered by a vendor at a supplier computer system;
 - transmitting the machine readable catalog to a public database system for access by Customer/Requestors;
 - transmitting the machine readable catalog to a customer/requestor system;
 - and receiving electronic purchase requisitions from said Customer/Requestor system based upon information obtained from said machine readable catalog.
12. The method as claimed in claim 11 further including the step of maintaining the machine readable catalogs.
13. In an electronic catalog requisition system in which catalogs of items offered by suppliers are stored on a central catalog database system, a method for retrieving information relating to said items and electronically ordering items from suppliers comprising the following steps:
 - downloading the catalog database to a Customer/Requestor computer system;
 - modifying said catalog database to create a private catalog, said private catalog containing data different than said downloaded catalog database;
 - searching said private catalog for information on an item selected by a user;
 - creating an electronic requisition for said item using the customer/Requestor computer system; and
 - transmitting said electronic requisition to a supplier computer system.
14. A method as claimed in claim 13 further including the step of transmitting said electronic requisition to a Customer/Requestor approver prior to transmitting said requisition to said supplier computer system.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 5,319,542
DATED : June 7, 1994
INVENTOR(S) : John E. King Jr. et al

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 2, line 57, change "Feaster" to ~~Master~~.
Column 6, line 65, following "it will", add ~~be~~.
Column 7, claim 1, line 29, change "form" to ~~from~~.
Column 8, claim 8, line 7, change "Customer/-" to ~~Customer/~~.
Column 8, claim 11, line 26, change "transmitted" to ~~transmitting~~.
Column 8, claim 13, line 40, change "Customer/-" to ~~Customer/~~.
Column 8, claim 13, line 48, change "customer/Requestor" to ~~Customer/Requestor~~.

Signed and Sealed this
Twenty-fifth Day of October, 1994

Attest:



BRUCE LEHMAN

Attesting Officer

Commissioner of Patents and Trademarks



US006330543B1

(12) **United States Patent**
Kepecs

(10) **Patent No.: US 6,330,543 B1**(45) **Date of Patent: *Dec. 11, 2001**

(54) **METHOD AND SYSTEM FOR
DISTRIBUTING AND RECONCILING
ELECTRONIC PROMOTIONS**

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Primary Examiner—James P. Trammell*Assistant Examiner*—John W. Hayes(74) *Attorney, Agent, or Firm*—Gary T. Aka

(57) **ABSTRACT**

A method and system for distributing and redeeming electronic promotions to a consumer through the Internet or other means is provided. An account which is associated with a unique key is maintained for each consumer account. Access is permitted to the consumer account upon presentation of the unique key over the Internet. The consumer is presented discount or other promotional choices of items available in at least one store associated with the key, or a collection of such stores, over the Internet and the selections of the discount or promotional choices made by the consumer over the Internet or other means are recorded. Upon purchase of items at the associated store by the consumer, such data are received, and the selections and purchases are reconciled to record a credit in the customer account. Unlike paper or electronic coupons, no consumer action other than the selection of promotions desired is required for item purchase.

67 Claims, 2 Drawing Sheets(75) **Inventor: Jonathan Kepecs, Woodside, CA (US)**(73) **Assignee: Concept Shopping, Inc., Lisle, IL (US)**

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) **Appl. No.: 09/191,591**(22) **Filed: Nov. 13, 1998****Related U.S. Application Data**

(63) Continuation-in-part of application No. 08/970,526, filed on Nov. 14, 1997, now Pat. No. 6,009,411.

(51) **Int. Cl.**⁷ **G06F 17/60**

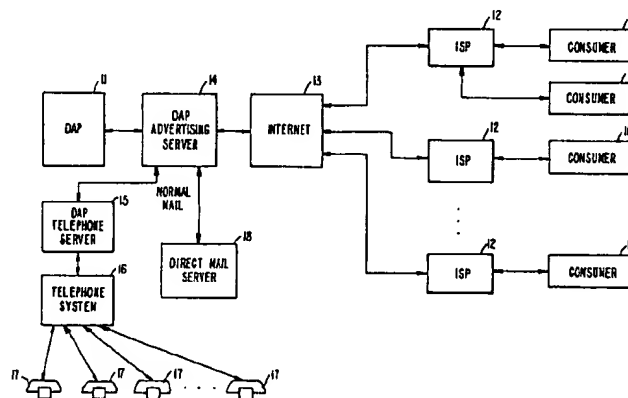
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705/39, 26, 1; 235/378, 380, 382**

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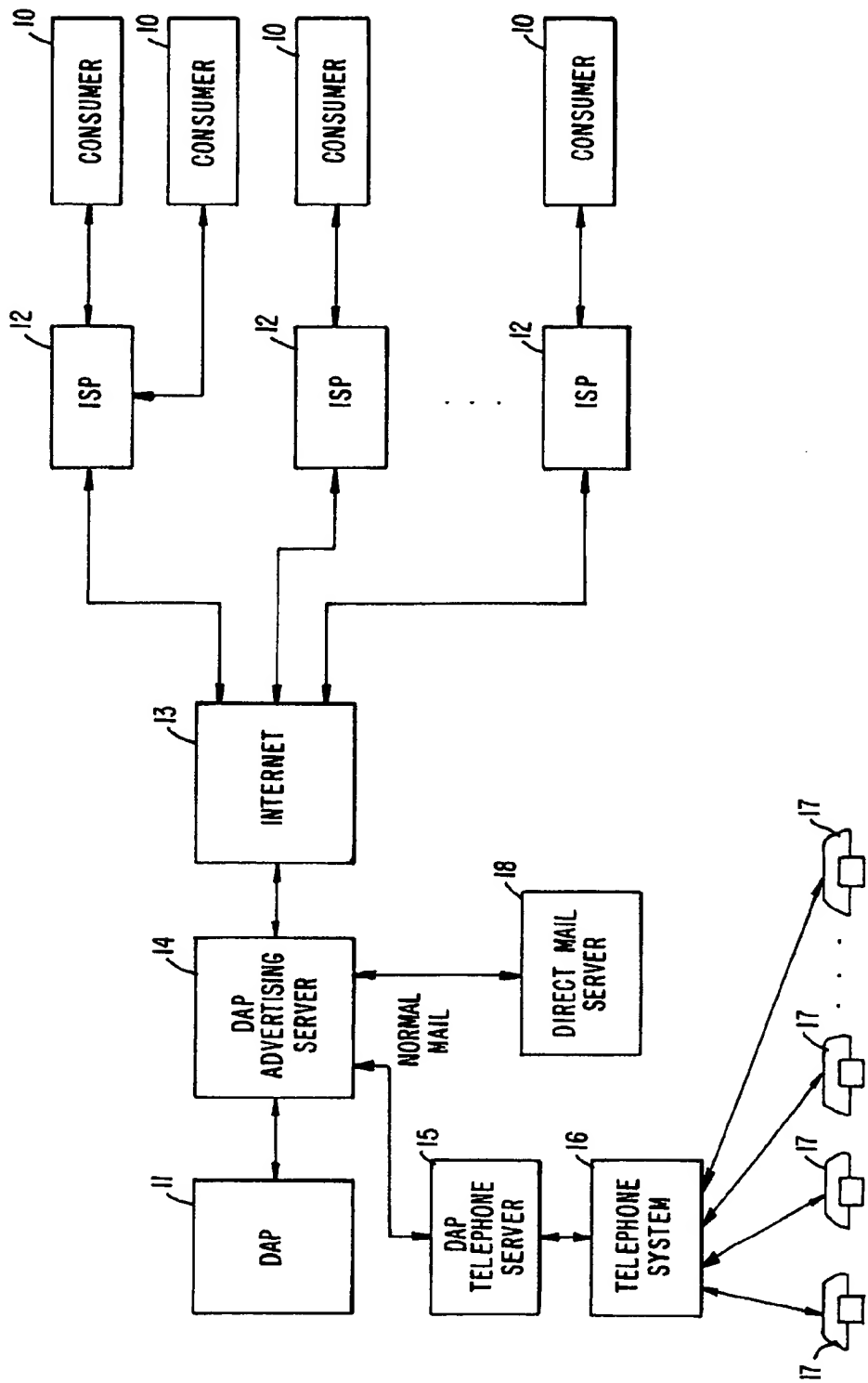
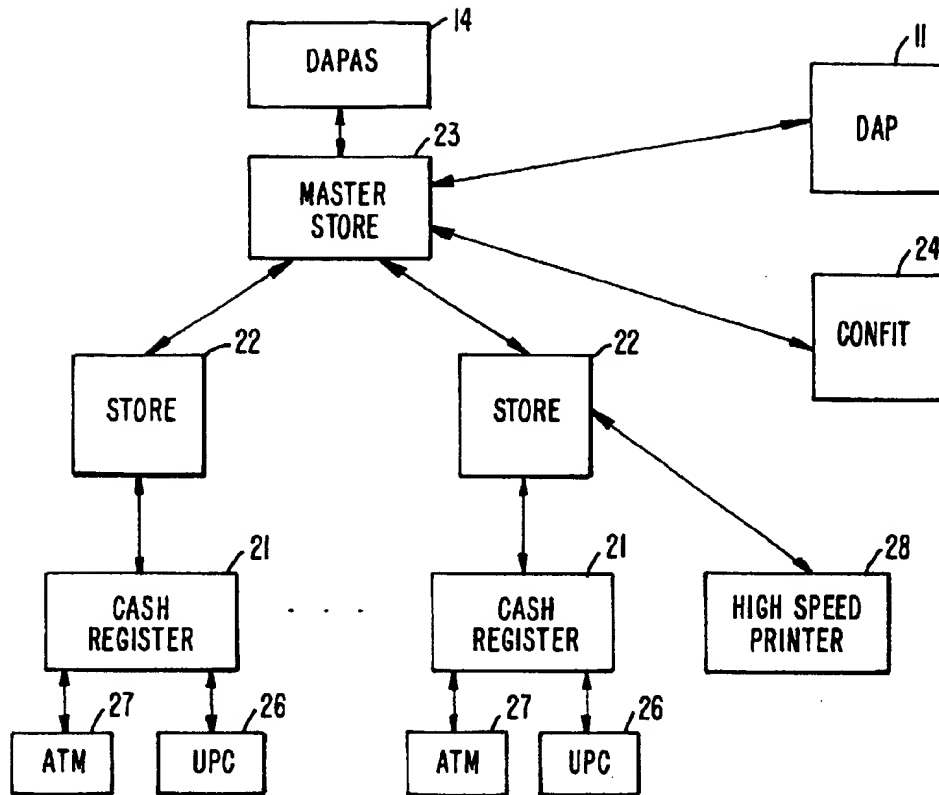
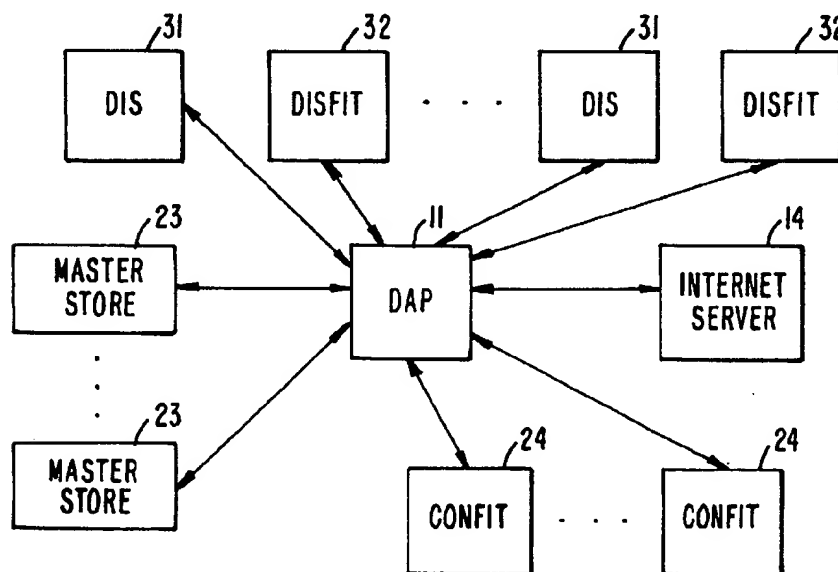


FIG. 1.

**FIG. 2.****FIG. 3.**

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METHOD AND SYSTEM FOR DISTRIBUTING AND RECONCILING ELECTRONIC PROMOTIONS

The present application is a continuation-in-part of U.S. appln. Ser. No. 08/970,526, filed Nov. 14, 1997 now U.S. Pat. No. 6,009,411.

BACKGROUND OF THE INVENTION

The present invention relates generally to discounting and promotion of goods and services to consumers, and, more particularly, to the electronic distribution of promotions, such as discounts, rebates and special prices for goods and services, and the subsequent resolution upon the redemption of the promotions by consumers.

Heretofore, consumer discounts on specific goods or services have been in the form of physical tokens or coupons by which a consumer can obtain a discount on the price of a good or a service by redeeming the coupon. Typically, paper coupons are physically distributed to consumers. For instance, coupons are often distributed with newspapers, or by blanket mailing to residents of a neighborhood or region. Coupons are sometimes distributed with items so that purchasers are encouraged to continue their purchases of the item, i.e., to encourage brand loyalty.

More recent forms of coupon distribution have attempted to better target the potential purchasers of particular items. For example, coupons are placed on the back of store purchase receipts, such as those at supermarkets, so that the coupons target those who actively shop. The coupons can be changed at the stores to quickly respond to changes in marketing campaigns. Another form of coupon distribution takes advantage of the computerization of sales networks. When a sale of a particular item is entered on a Universal Product Code (UPC) reader at a store, such as a supermarket, a coupon for the same item or family of items may be created for the purchaser to ensure brand loyalty. Alternatively, the coupon may be for a competing brand to encourage "brand-switching." Because the UPC reader is typically part of a large computer network, the distribution of the coupons can be changed or terminated very quickly.

Nonetheless, the problems of paper coupons still remain. Besides the distribution of coupons, the expense of the administration for the redemption of the coupons is high. Fraud remains a problem in coupon redemption and the targeting of consumers for particular goods and services can still be improved. Even electronic coupon distribution requires complex actions on the part of the consumer, such as printing a coupon or token, and taking it to a store for redemption. In the ideal case, electronic discounts should only require that a consumer who can be uniquely identified by a retailer be optionally subjected to some form of advertising prior to a discounted purchase. The discount should be implemented completely automatically at the cash register.

Furthermore, from the producer's and retailer's standpoint, the targeting of consumers remains difficult and expensive. Ideally, a database of all consumers would allow the precise targeting of advertisements, discounts or special prices being a form of advertisement, to individual consumers. The effectiveness of customer targeting would be maximized so that promotion money is spent where it is effective and not spent when it is ineffective. To that end, producers and retailers have used emerging technologies to identify consumers and their purchasing interests. Surveys using modern polling techniques have helped create such con-

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sumer databases, and computers have been used to correlate buying patterns of customers through store loyalty cards, for example.

However, such consumer identification remains elusive and expensive. Moreover, and perhaps more importantly, such goals of consumer identification are repugnant to notions of individual privacy. With the increased linking of computers by electronic networks, such concerns are likely to increase. Besides the individual resistance to divulging personal information, legal restraints on the use and gathering of personal information are possible, if not likely.

The present invention provides for a system and method which addresses these privacy concerns in a flexible way, while providing for the possibility of effective consumer targeting and automated discounting. The most appropriate discounts or other promotions are directed toward the individual consumer, yet the anonymity of the consumer is preserved. The present invention eliminates the paper coupon or its electronic counterpart, and is highly resistant to fraud. No paper coupons are handled by the consumer, the merchant, the manufacturer of the goods, or provider of the service.

Once the consumer is identified (with varying degrees of privacy protection) in accordance with the present invention, conventional forms of advertising may be directed precisely toward the consumer. The present invention allows the consumer's buying patterns to enable the targeting of the consumer with special discounts or prices on the goods or services he or she might buy. This targeting of promotions will also generally take into consideration factors beyond the simple interest of the consumer, such as the product cost and the consumer's sensitivity to discounted prices, which enable the producer and retailer to eliminate wasteful promotional spending.

In addition to facilitating the targeting of consumers individually by their purchasing habits, the present invention also permits the consumer to view their total buying history. This is not a feature currently available at the level of retail sales. While credit card companies today track purchases at the store level, purchases at the level of individual items are not tracked. The ability of a consumer to track his or her total consumption history is a unique feature of the current invention.

The present invention also permits the aggregation of several kinds of discounts. For example, a retailer loyalty program may offer a discount on an item, and a manufacturer may offer a discount on the same or a different item. The present invention permits a unified display and reconciliation of both discounts; in the former case by adding two discounts on the same item, and in the latter case, by displaying both discounts to the same consumer account.

SUMMARY OF THE INVENTION

To reach these seemingly contradictory goals, the present invention provides for a method and system for advertising electronic promotions to a consumer through a variety of means including a communications network, such as the Internet, and tying this advertising to the actual implementation of a special price or promotion at the point of sale. An aspect of the present invention is to allow a variety of advertising options to be used by the discounter and to make the promotions provided by the discounter available to the consumer in a secure, anonymous fashion at the point of sale, while retaining control over the degree of advertising required before making a promotion available.

An account is maintained for each consumer and a unique identifying key (ID) is associated with each consumer

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account. This account may be established by a registration process, such as is used in so-called "loyalty card" programs many retailers currently have in place. Access is permitted to the consumer account upon presentation of the unique ID over the communications network, or passively by using other advertising means, such as electronic mail to an e-mail address associated with the unique ID. The consumer is presented discount or special price choices of items available in at least one store associated with the unique ID, or a collection of such stores, via the advertising vehicle. Any selections of the choices made by the consumer over a communications network used to deliver the advertising are recorded when possible and are required to enable the associated promotions.

In one aspect of the present invention, the consumer can simply view the special prices or discounts available to him by providing his unique ID, and the simple fact that the consumer may have viewed these prices or discounts is recorded. Alternatively, no advertising may be required, or the advertising is otherwise specifically targeted to the consumer by other means, such as e-mail or individualized fliers sent anonymously to an address supplied by the holder of the unique ID, or by calling a so-called 800 number which allows the automatic binding of the caller's phone number to his unique ID. It is also possible to inform the consumer of future special discounts or prices directly on the cash register tape at the point of sale. For each consumer, the system records whether or not the consumer was exposed to any advertising about the price or discount, and the degree of exposure (for example, the consumer may have been asked to view extensive advertising and even to answer questions to qualify for a promotion.)

Upon purchase of items at the associated store by the consumer who makes his unique ID available, the details of the customer's purchase are recorded for analysis as to what future pricing or promotions should be offered to the consumer. Furthermore, the selections and purchases are reconciled to record a credit in the consumer's account, or the consumer simply pays the special prices uniquely advertised to him because the point-of-sale equipment has been informed of these prices when or prior to when the consumer's unique ID is input.

In one embodiment of the present invention, no direct consumer identification is maintained in the consumer account to preserve the anonymity of the consumer. For example, only the loyalty card identifier need be managed according to the present invention; the identity of the consumer is not needed. The purchasing history of each consumer at the stores where the promotions are redeemed for items (which need not be limited to the item(s) being promoted) is maintained in a database, and the consumer may access this history (in one embodiment of the invention.) This per-consumer history is called the microhistory. The microhistory can then be used not only to help the consumer in personal finance management efforts, but also to help the consumer identify trends in his buying habits, which may benefit from modification or reinforcement.

Thus, according to one embodiment of the present invention, a system can operate in the following manner: The consumer presents a unique identifier at the store's point of sale (POS). The consumer's purchases are recorded for subsequent analysis, and associated with the unique identifier in a secure fashion. Based on a variety of inputs, including, but not limited to, a consumer's response to advertising, microhistory, retailer cost data, retailer and manufacturer profitability requirements and input from

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manufacturers as to what promotions may be available, promotions that are unique to the consumer are calculated. Potentially beneficial promotions may also be presented to the manufacturer and retailer with the hopes of including these promotions in a subsequent promotion calculation. The calculated promotions are advertised (optionally) to the consumer, and prices that are not individualized (shelf prices) may also be calculated and sent to a shelf-pricing mechanism. The value of the promotions is realized at the point of sale, for example by directly charging the consumer his unique prices on items.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram of an advertising link between consumers and the Discount Administration Process (DAP), according to the present invention;

FIG. 2 is a block diagram of a representative point-of-sale computer network system, as found in a typical modern retail operation, and its connection to the DAP; and

FIG. 3 is a block diagram of a computer network connection between the discounters and the DAP, according to the present invention.

DETAILED DESCRIPTION OF THE SPECIFIC EMBODIMENTS

The channels of distribution of, and payment for, goods in a modern society are complex. Broadly stated, there is the producer that manufactures the goods, the retailer that sells the goods, and the consumer who purchases the goods. There is often a financial institution which supplies credit, for example, through a credit card, or which administers some other non-cash payment system, for example, through a debit card or a so-called smart card, for the consumer to purchase the goods. To compete in the marketplace, the producer and the retailer of goods employ advertising, including discounts, e.g., coupons, to encourage consumers to purchase their goods.

Increasingly, retail stores, especially chains of retail stores, are offering loyalty cards which reward shoppers for frequenting the store(s) covered by the loyalty card. Stores generally request additional customer information (such as name and mailing address) and assign the customer a unique (to the store or chain) number for identification purposes. When the loyalty card is used, advertised promotions are given to the consumer in the form of discounts or points, which may be redeemed directly at the point of sale as a credit against a purchase.

In such complex circumstances, the present invention takes advantage of another development in modern society, that of the Internet, and in particular, the Worldwide Web. With the development of the personal computer, the emergence of the so-called network computer, and computer/TV devices designed specifically to operate over the Internet, such as WebTV or NetPC units, more and more people are using the Internet to receive and transmit information. The present invention may use the Internet by which the consumer receives advertising and discount information, and possibly selects the desired promoted products. In certain cases, the consumer also receives information on the credits obtained by his or her purchase of discounted items. Conversely, the producer and retailer obtain useful consumer information to precisely and cost-effectively target their advertising and promotional offers.

This is all achieved without requiring the particular identities of consumers to be revealed. Privacy is thus preserved

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to a large extent and the amount of personal information released by the consumer is under his control. For example, if the consumer wishes to remain totally anonymous and uses only the Internet to receive advertising, his unique ID is sufficient. If the consumer wishes to access a so-called 800-number and provide only his unique ID, totally anonymous advertising can also be targeted at this consumer. If the consumer wishes to share just his phone number when he obtains his unique ID, the 800-number can even automatically associate the number the consumer calls from to his unique ID. Totally anonymous advertising can also be targeted at the consumer by printing out present or future advertising on the cash register tape issued upon that consumer's purchase of an item or service. If the consumer wishes to provide an e-mail address, telephone number or mailing address, other forms of advertising are possible, although with less anonymity for the consumer.

In general terms and in accordance with the present invention, consumers communicate with or are communicated to via an Advertising Server of a Discount Administrator Process (DAP) over the Internet or other advertising link. Each consumer identifies him or herself to or is identified by the Discount Administrator Process Advertising Server (DAPAS) by a unique KEY, which provides an identification of the consumer to the DAPAS, and at the same time, a barrier for the consumer from the DAP. The DAPAS makes the consumer aware (if required) of discounted and promotional items, which have been made available by discounting entities (the discounters), which offer the discounts, possibly as individual special prices, to the consumer. A discounter may be one or more direct producers, such as cereal makers; repackagers, such as stores offering products manufactured by producers under the stores' names; or stores which offer many discounted products which the stores resell. The discounts are indicated by amount or net price, locations where the discounted items may be purchased, any special restrictions (such as a limit on the number of items that may be purchased at the special price or requirements to purchase other items to qualify for the discount price) and time of expiration of the discounts. If an appropriate advertising form is used, the consumer makes his or her selections electronically, and the selections are recorded by the DAPAS if required, or the simple fact that the consumer was exposed to advertising may be recorded.

To obtain the discounts, the consumer visits an associated location, e.g., a store, and purchases the discounted items. To identify himself or herself to the store, the consumer uses the unique Key. The store sends a record of the purchases with the consumer's identifying Key to the DAP, i.e., the Discount Administrator Process. The DAP reconciles the consumer's selections with the purchases at the store and maintains the microhistory of the consumer's purchases (this history may be kept independently by the store, in which case, it may be desirable for the DAP to access the store's customer history database, sometimes called a Tlog, instead of maintaining a separate database.) The consumer may receive the discount (or his individualized prices) at the time of purchase, or receive a credit in a designated financial account, e.g., the consumer's credit card account. The DAPAS may inform the DAP when the consumer has been properly exposed to promotional advertising which in turn enables the promotion. Alternatively, the DAP may wish to offer the promotion concurrently with the advertising, or even with no advertising.

It should be noted that there is an exchange of benefits between the consumer and the discounter. In return for

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information containing the consumer's purchasing interests, the discounter gives the consumer a discount or some other promotional benefit. Hence it is often important that the consumer make a pre-selection of discounted items. However, it may be desirable to provide individualized pricing automatically to a consumer without any advertising—for example, to keep a favorite item at a certain price indefinitely so that there are no pricing surprises, or alternatively, to pleasantly surprise the consumer with an unexpectedly low price on an item.

Once the consumer has a KEY for identification, the present invention can also allow the consumer purchases to be, in effect, the selection of the discounts. That is, the tracking of the consumer's purchases allows the accumulation of information on the consumer's purchasing interests for which the discounts are given. The buying pattern of the consumer can affect the discounts available to the consumer with varying degrees of consumer participation.

Additionally, while this specification mentions the advertising, distribution, discounting and sale of goods, it should be understood that the present invention is equally applicable to discounted services as well.

The Electronic System Organization

The present invention operates over an organization of computers linked over networks. It should be understood that while a single computer might be described, the computer might be one or more computers which are tightly coupled (e.g., connected over a backplane), one or more programs on the same computer communicating via standard interprocess communication techniques, or more loosely coupled (e.g., connected by a network). Further, it should be understood that various functions of each computer might be distributed in other computers to reduce hardware requirements. For example, some or all software that provides the DAP 11 functionality might be run partially on the master store computer 23 and partially on store computer 22.

FIG. 1 illustrates the advertising link according to the present invention, the general interconnection of consumers to the Discount Administration Process Advertising Server (DAPAS) 14 by which the consumers receive advertising and discount information and make their selection of the "electronic discounts". The consumers can use their computers 10 for connection to the DAPAS 14 through the Internet or other advertising links as described below. The consumer computers 10 may be standard personal computers, the emerging so-called network computers, computer/TV devices designed specifically to operate over the Internet, such as WebTV or NetPC devices, or other data entry systems which permit two-way communication over the Internet (generally via email or a web browser.) The consumer computers 10 access the Internet through a computer server 12 of an Internet service provider (ISP). The ISP server 12 is connected to the Internet, a network of computers, represented by an Internet computer 13. The DAP computer 11 is responsible for computing the individual promotions offered to consumers via the DAPAS 14 and carrying out the effect of the promotions at the point of sale via the master store computer 23.

The DAP 11 employs a variety of inputs, strategies and constraints to arrive at targeted individualized discounts. These include, but are not limited to, the customer's purchase microhistory, retailer's cost basis and profit requirements, available manufacturer promotions, prospective manufacturer promotions, demographic information,

how a consumer was advertised to, whether or not he responded to an advertisement, well-known marketing strategies such as giving greater discounts where consumers exhibit more price awareness, statistical analysis of how consumers have behaved in the past and might be expected to behave in the future, possible interactions with other loyalty or promotion or credit-card incentive programs the consumer may participate in, and feedback on how well a given set of promotions worked to achieve specific goals.

In one aspect of the present invention, which was described previously, the consumers can communicate with the DAPAS 14 by ordinary telephone 17 through the telephone system 16. The DAPAS 14 uses a DAP telephone server 15 as an interface to the telephone system 16. The DAPAS 14 may also interface with a direct-mail process 18 that informs consumers of available promotions by ordinary mail if the consumer provided an address to associate with their unique ID.

The DAPAS 14 may also inform consumers of available promotions via the master store computer 23 by simply printing all available promotions associated with a given loyalty card via a high-speed printer 28 generally located in the front of the store, or by displaying current or future promotions on a consumer's cash register receipt produced by cash register 21. The DAPAS 14 may also potentially communicate shelf prices to the master store computer 21.

The DAP computer 11 may also communicate with systems at manufacturers or other discounters 31 to obtain additional information on available promotions and to offer the manufacturer the opportunity to take advantage of promotional opportunities developed by the DAP. The DAP 11 may further act to automatically infuse and monitor promotion dollars provided electronically via the discounter's financial system 32 into the retailer's pricing or discount system controlled by master store computer 23. For example, the discounter may wish to spend not more than x dollars on a specific promotion, but may be willing to spend x+y dollars if the promotion is performing well as determined by computations made by DAP 11 or by a human monitoring the results of the promotions. In this manner, the DAP 11 can act as a financial controller for many aspects of a promotion. This interconnection is described further in the discussion on FIG. 3.

Besides connection to the DAPAS 14, the DAP computer 11 is also connected to the computers of the seller of the discounted goods. FIG. 2 is illustrative of the general organization of the point-of-sale operation, i.e., a large store chain, for goods (and services). The store, e.g., a supermarket, typically operates with electronic cash registers 21, essentially computers which record each item sold, calculate the sales totals, prints the receipt, and so forth. Each cash register 21 is often connected to a Universal Product Code (UPC) scanner 26 and/or an Automated Teller Machine (ATM) reader 27. The UPC scanner 26 identifies bar codes on the products to the cash register 21. The ATM reader 27 reads the magnetically encoded account number of a credit/debit/smart card that has been issued by some financial institution, such as a bank, or a store-issued loyalty card, belonging to a consumer. In the case of a smart card, a specific device may be employed to generate a credit on the smart card as a way of providing a discount. Some cards may also encode their identification number as a bar code which is read by the UPC scanner. The ATM reader 27 also typically accepts typed-in, or otherwise entered, private information, such as a personal information number (PIN), to securely identify the card holder. The store loyalty cards, which are typically used to uniquely and anonymously

identify their customers, are generally read by the UPC scanner 26 or possibly a magnetic code reader such as the ATM reader 27.

In some larger stores, the cash registers 21 (and possibly high-speed printers 28) are connected to a store computer 22, which maintains the centralized inventory, pricing and discount information of the store. In turn, the store computer 22 is connected via a network to a master store computer 23. The master store computer feeds pricing information to many store computers 22 and acts as a clearinghouse for a variety of distribution, inventory and other information used in store operations. Of course, there can be multiple levels for store computers 22 depending upon the size of the retail operation. Naturally, nationwide store chains are likely to have many more computers and computer interconnections.

Outside of the retail network, the master store computer 23 is connected to the computers 24 of financial institutions (FIT). The FIT computers 24 verify and process the financial transactions involving credit, debit and smart cards, including those at the store register 21. Besides the connections to the FIT computers 24, the master store computer 23 is connected to the DAP computer 11. This connection permits the DAP computer 11 to reconcile the selections made by the consumer with the purchases at the store and maintain customer purchase microhistory (or access this history via a database (Tlog) maintained by the master store computer 23.) Further, the DAPAS 14 (under control of the DAP 11) can access the master store computer 23 for handling store advertising functions, such as setting shelf prices, accessing the high-speed printer 28 or the receipt printer of the cash register 21.

It should be noted that the computer network which interconnects the cash registers 21, UPC readers 22, ATMs 23, store and master store computers 22 and 23, and the FIT computers 24 belong to a private network, i.e., not the Internet.

Such networks are typically in the form of WANs (Wide Area Networks) of varying degrees of complexity. The DAP computer 11 is connected to this network to make the interconnections described above.

FIG. 3 illustrates the general network interconnection of the DAP computer 11 with the computer 31 of a discounter (DIS), such as a manufacturer or a retailer, and a computer 32 of the discounter's financial institution (DISFIT). The connection to the DIS computer 31 allows the DAP computer 11 to receive discount information and propose new discount plans, detailed previously, from the discounter. The DAP computer 11 may communicate with the DISFIT computer 32 so that the discounter's account is debited for goods purchased by the consumers under the discounter's discount. The DAP computer 11 may also be connected to the computer 24 of the consumer's financial institution (CONFIT). This connection allows credit obtained by the purchase of discounted goods to be placed into the consumer's account at the consumer's financial institution in an embodiment of the present invention wherein the discount is not taken at a store register 21.

As in the case of the store WAN above, the computer network for the discounter and its financial institution(s) is another private network, typically a WAN. The DAP computer 11 is connected to this network and other private networks belonging to the financial institutions of the consumers.

Operations of the System

The Discount Administration Process Computer

The DAP computer 11 maintains a Key Database of the consumers' accounts. As explained above, a unique Key

identifies the account of each consumer, but not necessarily the actual identity of the consumer. Each consumer may select his own Key, as long as the Key does not conflict with other Keys, or the Key may simply be assigned to a consumer.

Keys may be distributed by financial institutions, such as credit/debit/smart card companies, or by a third party, such as the operator of the DAP. A Key might also be issued as a part of a retailer's loyalty card program. The stores accepting a particular Key are associated with the Key. For example, when the consumer specifies a unique identification (ID) bound to a particular loyalty program, retailer or chain, the stores associated with the Key are clearly defined. Of course, only certain identified stores within a chain may offer a particular promotion.

There can be different levels of identification in the Key Database. One level is the secure registration level. At this level, the Key Database, which is stored on the DAP computer 11, contains a consumer's KEY and one or more credit/debit/smart card account numbers (FIDs) issued by a financial or retail institution to the consumer. There is a database for each set of KEY's obtained by a separate registration process. Thus, if two different store chains with separate loyalty programs are in the database, the same consumer may be represented by two different KEY's, and the identity of the chain is implicit in which database is accessed. The Key Database appears as:

<KEY₀, FID₀, FID₁, . . . FID_K>

<KEY₁, FID₀, FID₁, . . . FID_K>

<KEY₂, FID₀, FID₁, . . . FID_K>

<KEY₂, FID₀, FID₁, . . . FID_K>

. . .
<KEY_m, FID₀, FID₁, . . . FID_K>

The Key Database may contain alternatively or concurrently some other personal identification, such as a Social Security number, a driver license number, passport number, or even biometric information, such as a fingerprint, of the consumer.

A lower level of identification is protected registration. The Key Database contains the KEY and a lower level of identification of each consumer. An example is simply the KEY and the address of the consumer. It should be noted that it is sufficient in this method to simply identify the household belonging to a Key, for example, by mailing a Key-containing card to the occupant of a given address. In this way, while a consumer remains anonymous, the consumer will have significant difficulty in obtaining a second, unrelated account. Should an attempt be made by requesting another Key at the same address, the first Key can be invalidated. Should an attempt be made by requesting another Key at a different address, the existence of a Key already assigned to that different address can generate a request for the requester to either indicate a change of address (resulting in a different Key being subsequently issued to the previous address), or an invalidation of the original Key. This binding of Key to address thus allows the consumer to remain anonymous when accessing their account over the Internet, and allows the discounting computational system to maintain a consistent history of buying habits for a household, without compromising the individual's privacy. Note that the address might also be an e-mail address.

Finally, the lowest level of identification is simply the KEY with no other identification data. The consumer is completely anonymous. This method may be used by the DAP computer 11 even if the KEY has non-anonymous

bindings elsewhere (for example, if the KEY is associated with a store's loyalty card). Thus, the consumer can still be anonymous to the DAP, even if the store is aware of the consumer's identity or just his address.

These different levels of identification imply different mechanisms and timing for reconciling the discounts of goods purchased by the consumer. These mechanisms are discussed below. An important aspect of the invention is that disjoint sets of KEYs may refer to the same consumer, yet still be reconciled to belong to one consumer. For example, a consumer may belong to two different loyalty cards, each with their own KEY. The DAP 11 may thus have:

<KEY1, store loyalty ID1>

<KEY2, store loyalty ID2>

One way to associate KEY1 and KEY2 to the same consumer is simply to allow the consumer to specify both Keys. This can allow the program running on the consumer's computer 10 to automatically correlate both accounts to present the consumer with a total summary of purchasing history, even though the DAPAS 14 is unaware of the correlation. It is also possible for the consumer to provide KEY1 and KEY2 (and KEY3, KEY4, etc.) to the DAPAS 14 so that the DAPAS 14 can make the association. This same technique can be used to correlate addresses if less secure Key binding is used.

Duplication of discounts is sometimes a problem. Within a single Key space (e.g., one bound to a single loyalty or credit card), duplication can be eliminated by simply refusing to issue more than one, or only a set number of, promotion(s) for a given item within a given time period. The same can be done across multiple correlated Key spaces. If Key spaces are un-correlated, then duplication cannot be categorically disallowed. However, because Key spaces are typically shared by non-conflicting retailers, and because the consumer can gain increasing benefits by repeatedly using the same Key space, duplication of promotions across un-correlated Key spaces is not a severe problem.

For the consumer's convenience, the DAP's agency may issue an identification card to each consumer with a magnetic or bar code for his Key. The card allows the consumer to quickly identify his Key and account at a store with a UPC scanner 26 or ATM reader 27. The card might also show the Key so that the consumer can type in his Key. Alternatively, for additional security, the consumer's identification card may carry an encrypted or hidden identification code (such as a PIN) before the consumer's Key is validated after being read at a store, for example. Alternatively, the DAP may simply rely on Keys already obtained by the store or credit card agency.

The Key Database is also accessed by the DAPAS 14. Whenever the consumer uses his or her computer 10 to access the DAPAS 14, he must specify his KEY. This enables the consumer to access information unique to himself, namely his microhistory and the individual promotions currently available to him. The DAPAS 14 presents the discounts available to the consumer over his computer 10. In addition to a menu search of available discounted products, a "stream of consciousness" search is also available. For example, a consumer's interests may be queried. The DAPAS 14 then suggests that the consumer investigate products of a certain type.

Note that there is no particular security placed on a non-secure Key itself. The knowledge of such a Key does not compromise the security of the system, since the consumer's identity is unavailable for harassment (for example, by telemarketing firms) and selection of discounts by others

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using the Key confers no benefit on the person other than the true keyholder.

Selection of Discounts by the Consumer

Through his or her computer 10, the consumer may browse through the discounts or other promotions available to him or her at the DAP Advertising Server 14—this is generally the presentation of the Reconciled Discount list described below. A Web site provides access to a GUI on the consumer's computer 10 to easily access his or her account on the DAP computer 11. The Web site may be hosted on the DAPAS 14, or DAPAS 14 may interact with a remote Web host which in turn interacts with the consumer. If the consumer's Key is created through a particular company's loyalty card program, the consumer may be directed to a Web site operated by that company, which in turn interacts with DAPAS 14.

The consumer selects the desired discounts, e.g., the special prices on the displayed items. If required, the consumer also selects at which stores he will make the purchases. Additional information about the products, such as marketing information, may be displayed. For instance, from the consumer's microhistory the DAP computer 11 can make a correspondence with the consumer's Key and one or more stores where the consumer is likely to make his or her purchases and present promotions at those stores to the consumer. The selected discounts and their total value are displayed to the consumer and a per-account list of selected discounts, any restrictions on these discounts, when each discount was selected, and the expiration date of the discount, along with the discount value, is sent by the DAPAS 14 to the DAP computer 11.

To prevent tampering of the consumer's selections, the DAP computer 11 also has an optional security lock feature. Once the security lock is set, it is difficult, or impossible, for a malefactor to deprive a consumer of his selected discounts by subsequently deleting or changing them. This lock may be set by the consumer after his selections are made. The lock may also be set by the DAP if a pattern of misuse is detected, by the receipt of consumer complaints, for example.

As discussed previously, the Internet is only one of many ways by which a consumer may become aware of the discounts and special prices available to him. The Internet is perhaps the richest medium for this purpose and is employed here as the most general example of different advertising vehicles. Advertising vehicles may be classified according to their cost, the degree to which it may be verified that a consumer viewed an advertisement, the amount of consumer interaction required to deliver the advertisement, the time it takes to deliver an advertisement, and so on. It is not always necessary to advertise a promotion in order to deliver it. The present invention applies to all of the discussed forms of advertising.

Customer Purchase of Discounted Items at Store

To realize his discounts, the consumer identifies his Key during the purchase of items at a store. Each store maintains a record of the consumers' transactions, such as:

```
<KEY, <UPC0, PRICE0, QUANTITY0>, <UPC1,  
PRICE1, QUANTITY1>, . . . <UPCK, PRICEK,  
QUANTITYK>, <DISCOUNT13 TYPE0, VALUE0>,  
<DISCOUNT_TYPE1, VALUE1>, . . .  
<DISCOUNT_TYPEK, VALUEK>>
```

This transaction record is part of a customer transaction log or "Tlog". The example above is a simplification—for example, not all items in a store have a UPC but may be indexed by a different code.

The Tlog is stored in the store master computer 23, and may be accessed by the DAP 11, or the DAP may maintain

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its own version of the Tlog data. Each customer's microhistory is generally derived from the Tlog data, but may be computed directly from data received from the cash register 21 and UPC reader 26.

The consumer may provide his Key with a card containing the Key in the form of magnetically-encoded data or bar code data, which is simply scanned in. The Key may be in a separate card, or in a credit/debit/smart card which also includes the Key data. A retailer's loyalty card can include the Key data, which might simply be the store's loyalty card ID. The Key can also be provided by the consumer by simply entering the Key at an ATM reader 27 (using a template, such as those on push-button telephones) or letting the store clerk enter the Key at the register 21. More exotic forms include biometric identification.

Alternatively, the consumer need not specify his Key. With a list of financial institutions which are tied to the DAP consumer accounts, the store can automatically determine the consumer's Key. For example, upon the reading of his credit/debit/smart card, say, a VISA (a registered trademark of VISA International, Inc.) credit card, the store's register 21 automatically ties the transaction to the consumer's Key. Such accounts may be "read-only," or, more precisely, "deposit-only," financial institution accounts, which are credited with accepted promotions. The credits in these accounts are subsequently transferred into the consumer's liquid accounts upon validation of the identity of the cardholder.

Note that the Key may be securely associated with a customer's financial institution account (through the Key Database) without the DAP or the store knowing the financial institution account. Theft of a Key is not serious because someone in possession of the Key can only select discounts or other promotions which accrue to the actual Key holder. No significantly bad results can occur since the discounted products must still be legitimately purchased.

Regardless of how the KEY is presented by the consumer, the store's Tlog records all of the activity associated with each KEY. The set of discounts associated with each KEY is computed by the DAP 11, passed to master store computer 23, and thence to store computer 22, generally in advance of the customer's visit. The KEY is passed from register 21 to the store computer 22, along with the current consumer's transactions (purchases, paper coupons used, etc.) that form the part of the consumer's Tlog attributable to the current set of purchases. In return, the store computer 22, passes back the discounts or actual prices to charge the consumer, or, if the discounts are to be credited to a consumer's financial account, initiates the process of arranging this credit, described below in more detail. The store register 21 may also be directed to print information about the discounts, such as the list price and the customer's special price, total amount saved, potential future discounts available, and so on, on the customer's receipt.

Implementing Transactional Discounts

Some discounts may be limited as to the number allowed to a customer, whether or not they may be used in conjunction with other discounts including paper coupons, tied to a single use based on having spent a certain amount within a given time limit, and so on. Such discounts are termed Transactional Discounts. The store computer 22 must be provided with rules on how to fully reconcile each discount where possible, but some kinds of discount require that the store computer 22 interact with other computers to enforce the discounting rules.

When the calculation at the store computer 22 takes place to enforce transactional discounts, there is a flow of data

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from the store register 21 to the DAP computer 11 to describe the items actually purchased, and a reverse flow from the DAP computer 11 to the store register 21 (generally via the master store computer 23 and the store computer 22) which controls the discounts available to a given account. 5 The latter flow is needed to ensure that discounts which have been used cannot be reused unless reuse of discounts is specifically allowed—the current validity of a transactional discount must be checked.

The flow of data to the store computer 22 from the DAP computer 11 typically occurs after the consumer selects applicable discounts from the DAPAS 14 and before the consumer arrives at the store. The DAP computer 11 may infer, based on likely location of the store where the discounts will be applied, or most likely applied, (either the store is expressly noted by the consumer, or the consumer's purchasing history may indicate likely store selection), the time interval the DAP computer 11 has before the master store computer 23 or store computer 22 must be informed to ensure that the consumer's discounts are available, etc. 20 Similarly, there may be a time delay before the DAP computer 11 is informed of the actual purchases so that it may in turn be consulted by other stores to ensure that transactional discounts are properly controlled (since it may be reasonably assumed that some time is required for the consumer to go to a different store and attempt to re-use an accepted discount, and the store computer 22 and/or master computer 23 could track attempts by the consumer to re-use an accepted discount at the same store).

Alternatively, the DAP computer 11 or master computer 23 may be informed immediately upon consumer purchase, so that it may arbitrate the reuse policy on each discount to ensure that un-authorized duplicate discounts are not granted, even if the customer travels quickly from one store to another with the hope of obtaining the same discount several times. If the DAP computer 11 is always consulted for each consumer transaction, there is no requirement to pre-load store computers with promotion rules to implement at the register. 35

In any of the data flow scenarios where the DAP computer 11 and the store computer 22 or master store computer 23 do not interact immediately and information is saved for a period of time before the account is reconciled, we refer to this stored information as cached data. Caching data can reduce latency (so that the consumer need not wait for a remote transaction between the store and DAP computers take place), but introduces complexity since cached data can become invalid in many ways. For example, if several stores receive cached data about a given account, once the customer using the account makes a purchase, there is only a limited amount of acceptable delay before the cached data must be invalidated. This can be accomplished by having a computer act upon an invalidating event (the DAP computer 11 if, say, a discount is canceled or added; the store computer 22 when discounts are accepted) and informing its peer(s). 50 Alternatively, the computer acting upon an invalidating event may first query its peer(s) to see if any other invalidating events have happened. If not, the transaction can be completed and the peer computer(s) put on notice that subsequent transactions should not be processed immediately. Otherwise, the transaction must wait until the invalidating event has been completely processed and any necessary cached data are reloaded.

Preparation of Discounts

As described earlier, the DAP 11 employs a variety of inputs to compute proposed pricing or discounts. These include, but are not limited to, the customer's purchase

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microhistory (or customer's Tlog data), retailer's cost basis and profit requirements, available manufacturer promotions, prospective manufacturer promotions, demographic information, how a consumer was advertised to, whether or not he responded to an advertisement, well-known marketing strategies, such as greater discounts where consumers exhibit more price awareness, statistical analysis of how consumers have behaved in the past and might be expected to behave in the future, possible interactions with other loyalty or promotion or credit-card incentive programs the consumer may participate in, and feedback on how well a given set of promotions worked to achieve specific goals.

To describe how the DAP 11 should compute the discounts, a formula language which computes actions based on predicates involving assertions about the state of a customer's Tlog and other states such as product information, may be used. Formulas control all of the system feedback as well, as consumer purchasing behavior based on promotional activity is measured and modifies the action of subsequent promotional activities of the system automatically. Without a flexible programming language interface, formulas must be hardwired into the system, making it difficult or impossible to insert new formulas into the system. The language that defines the formulas allows new formulas to be easily defined, and permits formulas that control the behavior of other formulas to be easily defined and modified, even while the system is running. Further, this language may be compiled from commands derived by employing a graphical user interface (GUI) that simplifies how formulas are described. Note that new formulas can easily be created and old or unsuccessful formulas can be removed, either manually or automatically. This GUI may also allow formula designers to test out the possible implications of a discounting action by simulating or predicting its result. Some of these potential results may be based on speculation as to how a discounter could achieve specific sales or marketing goals by infusing money into the system. These results are communicated to the discounter (who may also use the system himself to investigate potential marketing campaigns), and the discounter may elect to initiate the proposed targeted discounting campaign. By presenting a high-level interface to the formula programming language, the GUI makes it much easier for designers to implement and test new formulas, and to communicate the results of formula actions to designers, retailers, and manufacturers. The GUI may also be used to define how the system generates reports on its activity—for example, on how the results of a given set of formulas affected retailer profitability in a particular time period.

A Discount List database is created for a list of discounts due to each customer. Reconciliation with the consumer discount selections at the DAPAS 14 is also made to obtain the correct discounts due. In making the reconciliation between purchases and consumer selections, some discounters may not care if the purchase was made before the consumer's selection, instead of selection first. The reconciled data appears as records in the Reconciled Discount List database:

```
<KEY, STORE, DISCOUNT0, ITEMID0, DISCOUNT1,
ITEMID1, . . . >
```

From the Reconciled Discount List database, the total discount due for each Key is computed and a list of discounts payable by the discounter is determined. The Reconciled Discount List is eventually communicated to the store computer 22 as described previously, in order that the store register 21 may implement the discounts that must be given at the point of sale.

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Reconciliation of Consumer Accounts

Full reconciliation of a consumer account for the purposes of issuing a credit to a financial institution may require a number of steps to ensure full audit control. In the case where the discount or net price is taken at the register, the discounts are pre-authorized and the only major audit control needed is to ensure that the discounter has input the required amount of funds into the system, since the customer receives his discount at the register 21.

To reconcile each consumer account, the Reconciled Discount List database is validated as required against the purchase proofs (time, products, KEY, store ID) recorded at the store in the Tlog or in a microhistory maintained by the DAP 11, the Key database, a financial institution or read-only financial institution account number, the identity and quantity of the discounted items purchased, other applied discounts, and the time of purchase, for each consumer account.

From the discount information supplied by each discounter and stored on the DAP computer 11, and Reconciled Discount List database, a final list of discounts created by resolving conflicting discounts. For example, if a paper or electronic coupon had also been presented by the consumer for a discount, this discount may be disallowed. In the case of discounts taken at the register, resolution is generally carried out by the store computer 22 (subject to any transactional discount requirements as discussed previously) so the computer 22 must be generally be supplied in advance with rules for handling this reconciliation by the DAP 11 via the master store computer 23. In this case, the Reconciled Discount List database must be converted into rules that can be executed at the store computer 22.

When the discount is taken in the form of a credit to a consumer's financial instrument, the DAP computer 11 debits the discounter's financial account computer 32 and credits the consumer's financial institution account. Otherwise, the discount amount is simply deducted from the consumer's bill at the point of sale, or, if the consumer is provided with special pricing on a set of items, this special pricing is realized at the point of sale. It should be noted that a special price is distinct from a discount since the actual price of the item is guaranteed. If mapping information is not kept by the DAP 11 and the consumer's financial institution has the necessary information to make the mapping between the Key and a financial institution account, the necessary information is sent directly to the financial institution computer 24. All of these transactions are performed electronically where possible.

A full history of all data is retained for auditing purposes. Final auditing steps, such as the validation of store inventory to cover the store claims for credit of the sale of discounted items and certification by an external accounting agency, complete these steps of the operations.

The Reconciled Discount List database is also accessed by the DAP Advertising Server 14 so that each consumer, using his or her KEY, can browse his discount file, with as much security as the consumer desires (only the unique, anonymous ID is absolutely needed). This information also facilitates the consumer's selections since the database provides an indication of the consumer's interests by the previous purchases. For additional convenience and usefulness to the consumer, the consumer's information is available in industry standard format. This allows the consumer to use third party software, such as personal finance management of which Quicken, (a registered trademark of Intuit, Inc. of Mountain View, Calif.) is merely an example, to maximize the use of the consumer's information, for his or her benefit.

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The purchasing history can be used to infer consumer marketing information without the intrusion of additional personal information disclosure or the burden of consumer surveys. The aggregation of the purchasing histories of the consumers can be used to find trends or patterns in consumer purchases as broadly or narrowly as desired. Nonetheless, despite this use of consumer information, the privacy of the particular consumer is protected as described above.

General Applications for the DAP Advertising Server

While the present description of the DAP Advertising Server (DAPAS) 14 envisions access via a Web browser, the DAPAS 14 should be viewed as a generalized advertising processor which need not involve the Internet. The DAPAS 14 is responsible for making the consumer aware of the promotions available to him, and typically (but optionally, depending upon the specific promotion), providing feedback to the DAP computer 11 as to what promotions were or were likely observed or selected by the consumer. The DAP computer 11 may or may not require this information to make its calculations.

The DAPAS 14 may make optimizations. For example, a consumer who starts using the Internet need not be sent expensive direct mail, and this information about the consumer can also be supplied to the DAP computer 11 to assist in its cost consideration methods. As described previously, the consumer may be informed of promotions by the Internet, email, 800-number, printed information on the cash register receipt, direct mail, or other targeted forms of advertising. The DAPAS 14 directs the advertising, the degree the consumer is involved—from no involvement, to passive involvement where the consumer may have been exposed to the promotion, to active involvement, where the consumer is known to have been exposed to the promotion (for example, by clicking the mouse on a given promotion.) The DAP computer 11 uses this information to decide what promotion to give. In some cases, a special price may be given regardless of whether or not a consumer was exposed to advertising about it; in other cases, the price may not be available until the consumer has been targeted by advertising. In either case, the DAP computer 11 controls aspects about the particular promotion, such as the length of the promotion, how many times the same item can be bought at the special price by the same consumer, and so on.

Security Features

It should further be observed that the present invention has many security features and options:

a. If the consumer's Key is associated with a financial institution account, Key secrecy is unnecessary since security depends only on the security of the financial institution account.

b. Stores cannot cheat (other than to falsely increase processing charges) by issuing false proofs of purchase to a Key issued by a financial institution since the benefit goes only to the true holder of the financial institution account.

c. If, instead of the DAP, a financial institution issues the Key to the consumer, only the Key is required to be shared with the DAP. Neither the store nor the DAP needs access to the consumer's financial institution account associated with the Key.

d. If a financial institution creates a special deposit-only account, which access is shared with the DAP and/or the store, only the financial institution may transfer money from

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this account to a main consumer account upon a discount validation by the DAP.

e. By limiting or prohibiting modifications to discounts selected by the consumer, a computer "hacker" with knowledge of the consumer's Key cannot frustrate the consumer by tampering with consumer selections.

f. By limiting the number of selected products, the time period during which the selected discounts remain valid, or by using simple challenges, consumers cannot abuse the system by simply selecting all discounts, or even having discounts selected by an agent program automatically, to avoid the conscious selection of discounts. If such were possible, consumers could obtain the benefits of discounts without returning to the discounters the benefit of their advertising, which benefit is usually desirable.

While the foregoing is a complete description of the embodiments of the invention, it should be evident that various modifications, alternatives and equivalents may be made and used. Accordingly, the above description should not be taken as limiting the scope of the invention which is defined by the metes and bounds of the appended claims.

What is claimed is:

1. A method for distributing and redeeming electronic promotions to a plurality of consumers through at least one communications network, comprising:

maintaining an account for each consumer;
 associating each consumer account with a unique key;
 permitting access by said consumer to said consumer account upon presentation of said unique key over said at least one communications network, said access including said consumer's purchasing history of promotions through said consumer account;
 presenting promotion choices of items available at at least one store associated with said unique key over a selected communications network, including said at least one communications network to said consumer;
 receiving data of purchased items by said consumer at said associated store; and
 reconciling said selections and purchases to credit said consumer.

2. The method of claim 1 wherein said reconciling step comprises recording a credit in said consumer account.

3. The method of claim 2 wherein said consumer account comprises a financial institution account.

4. The method of claim 3 wherein said financial institution account comprises a "deposit-only" account.

5. The method of claim 2 wherein said consumer account comprises a store loyalty program account.

6. The method of claim 2 wherein said consumer account comprises a discount account established by a third party.

7. The method of claim 1 wherein said reconciling step comprises directly crediting consumer at said associated store.

8. The method of claim 7 wherein said consumer account comprises a store loyalty program account.

9. The method of claim 7 wherein said consumer account comprises a discount account established by a third party.

10. The method of claim 1 wherein said reconciling step comprises directly implementing an individualized price on certain selected and purchased items.

11. The method of claim 1 wherein said presenting promotion choices step comprises presenting specific discounts on specific items.

12. The method of claim 1 wherein said presenting promotion choices step comprises presenting a purchase incentive for one or more items available in said associated store, said purchase incentive unrelated to said one or more items.

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13. The method of claim 1 wherein said presenting promotion choices step comprises presenting specific prices on specific items.

14. The method of claim 1 wherein said presenting promotion choices step comprises presenting said promotion choices by telephone.

15. The method of claim 1 wherein said presenting promotion choices step comprises presenting said promotion choices by printer at said store.

16. The method of claim 1 wherein said presenting promotion choices step comprises presenting said promotion choices by electronic mail.

17. The method of claim 1 wherein said presenting promotion choices step comprises presenting said promotion choices by direct mail.

18. The method of claim 1 wherein said presenting promotion choices step comprises presenting said promotion choices by a cash register printer at said store.

19. The method of claim 1 wherein said presenting promotion choices step comprises calculating shelf prices for all consumers at said store.

20. The method of claim 1 further comprising the step of recording selections of said promotion choices made by said consumer over said communications network.

21. The method of claim 20 further comprising the step of sending data of said recorded selections to one or more of said associated stores within a preselected time limit after said recording selection step so that said data is sent prior to purchase of items by said consumer at said associated store.

22. The method of claim 21 further comprising the step of indicating discounts credited to said consumer account at the time of purchase of items by said consumer at said associated store.

23. The method of claim 22 further comprising the step of invalidating said sent data of said recorded selections to one or more of said associated stores within a preselected time limit after said time of purchase of items by said consumer at said associated store.

24. The method of claim 21 further comprising the step of inferring a likely associated store where purchase will occur by said consumer.

25. The method of claim 24 wherein said inferring step comprises inferring said likely associated store from the data of previously purchased items by said consumer.

26. The method of claim 24 wherein said inferring step comprises inferring said likely associated store from said unique key.

27. The method of claim 21 wherein said one or more associated stores are preselected by said consumer.

28. The method of claim 1 further comprising the step of sending data of said recorded selections to said associated store upon purchase of items by said consumer at said associated store so that discounts credited to said consumer account are indicated at the time of purchase of items by said consumer at said associated store.

29. The method of claim 1 wherein said receiving data of purchased items step occurs upon purchase of items by said consumer at said associated store.

30. The method of claim 1 wherein said receiving data of purchased items step occurs within a preselected time limit after purchase of items by said consumer at said associated store.

31. The method of claim 1 further comprising the step of presenting data of previously purchased items by said consumer over said communications network to said consumer.

32. The method of claim 31 wherein said data presenting step further comprises formatting said data to industry standards.

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33. The method of claim 1 wherein said consumer account maintaining step has a limited direct identification of said consumer with said account.

34. The method of claim 33 wherein said consumer account maintaining step excludes identification of said consumer by name.

35. The method of claim 34 said consumer account maintaining step comprises:

maintaining a database of only said key, at least one financial institution account number, and purchasing history for each consumer.

36. The method of claim 35 wherein said financial institution account number comprises a credit card number.

37. The method of claim 35 wherein said financial institution account number comprises a debit card number.

38. The method of claim 35 wherein said financial institution account number comprises a smart card number.

39. The method of claim 33 wherein said consumer account maintaining step includes a name of each customer.

40. The method of claim 37 wherein said reconciling step further comprises:

communicating said credit to a financial institution account through said financial institution account number so that said financial institution account may be credited.

41. The method of claim 40 wherein said financial institution account is maintained in a smart card.

42. The method of claim 1 wherein said access permitting step is over the Internet.

43. The method of claim 42 wherein said access permitting step further comprises accessing said consumer account through a Web site upon presentation of said unique key by the consumer.

44. The method of claim 43 wherein said Web site is associated with said store.

45. The method of claim 1 further comprising the step of offering promotions to said consumer derived from received data of consumer purchases.

46. The method of claim 45 wherein said promotion offering step comprises targeting large aggregates of consumers.

47. The method of claim 45 wherein said promotion offering step comprises targeting individual consumers.

48. The method of claim 47 wherein said targeting step comprises inferring said individual consumers from purchasing and promotion selection data of said consumers.

49. The method of claim 48 wherein promotions offered to a targeted individual consumer include promotions for products and services based upon purchasing and promotion selection data of said consumer, said promotions for products and services unrelated to items actually purchased by said consumer.

50. A system for distributing and redeeming electronic promotions to a plurality of consumers comprising:

a first communications network interconnected to a plurality of first computers interfacing with said plurality of consumers;

at least one second computer connected to said first communications network, said second computer maintaining an account for each consumer, said account including a database, each consumer account accessible upon presentation of a unique key over said first communications network, said accessed account show-

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ing promotion choices of items available at at least one store associated with said key; and

a second communications network distinct from said first communications network, said second communications network interconnecting said second computer and at least one computer at said associated store so that said second computer and said store computer can exchange recorded selection data of promotion choices and purchase data of items at said associated store over said second communications network to reconcile said selections and purchases to credit said consumer.

51. The system of claim 50 wherein said second computer records data of selections of said promotion choices made by said consumer over said first communications network.

52. The system of claim 51 wherein said second computer reconciles said selections and purchases to record a credit in said consumer account.

53. The system of claim 51 wherein said store computer reconciles said selections and purchases to directly reduce a total price of selected and purchased items.

54. The system of claim 50 wherein said second computer maintains only limited direct identification of each consumer in said account database.

55. The system of claim 54 wherein said consumer account database excludes identification of said consumer by name.

56. The system of claim 55 wherein a record of said consumer account database has only said key, at least one financial institution account number, and purchasing history for each consumer.

57. The system of claim 56 wherein said financial institution account number comprises a credit card number.

58. The system of claim 56 wherein said financial institution account number comprises a debit card number.

59. The system of claim 56 wherein said financial institution account number comprises a smart card number.

60. The system of claim 56 wherein said consumer account database includes a name for each customer.

61. The system of claim 51 further comprising a third network connecting said second computer and a computer at a financial institution, said second computer communicating a credit to said financial institution computer so that an account of a consumer at said financial institution is credited to reconcile selections and purchases made by said consumer.

62. The system of claim 50 wherein said first network comprises the Internet.

63. The system of claim 62 wherein said first network further comprises a Web site presenting a consumer account accessible only upon presentation of said unique key by said consumer.

64. The system of claim 63 wherein said Web site is associated with said store.

65. The system of claim 63 wherein said Web site operates on a server, said server interacting with said second computer to access said consumer account.

66. The system of claim 50 wherein said accessed account presents data of previously purchased items by said consumer.

67. The system of claim 66 wherein said data of previously purchased items are formatted to industry standards.

* * * * *



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(12) **United States Patent**
Woolston(10) **Patent No.:** **US 6,266,651 B1**
(45) **Date of Patent:** **Jul. 24, 2001**(54) **FACILITATING ELECTRONIC COMMERCE
THROUGH TWO-TIERED ELECTRONIC
MARKETS AND AUCTIONS**00/08578 • 8/1998 (WO).
00/17797 • 9/1998 (WO).
00/62231 • 4/1999 (WO).(75) **Inventor:** **Thomas G. Woolston, Alexandria, VA
(US)**(73) **Assignee:** **MercExchange LLC (Va), Alexandria,
VA (US)**(*) **Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.(21) **Appl. No.:** **09/253,057**(22) **Filed:** **Feb. 19, 1999****Related U.S. Application Data**(60) Continuation of application No. 09/166,779, filed on Oct. 6,
1998, which is a division of application No. 08/554,704,
filed on Nov. 7, 1995, now Pat. No. 5,845,265, which is a
continuation-in-part of application No. 08/427,820, filed on
Apr. 26, 1995.(51) **Int. Cl.⁷** **G06F 17/60**(52) **U.S. Cl.** **705/27**(58) **Field of Search** **705/27, 26**(56) **References Cited****U.S. PATENT DOCUMENTS**

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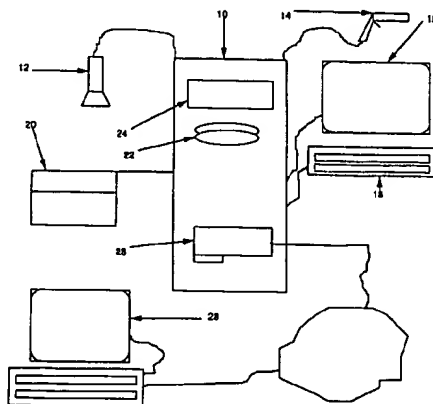
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Primary Examiner—V. Miller*Assistant Examiner*—Forest O Thompson, Jr.(74) *Attorney, Agent, or Firm*—Burns, Doane, Swecker &
Mathis, LLP(57) **ABSTRACT**

A computer-implemented two-tiered electronic market system includes a data repository storing information corresponding to an inventory of one or more available items and a first-tier electronic market (e.g., a retail tier) that provides a first participant (e.g., a retail consumer) access to the inventory of one or more items in the data repository. The inventory is offered to the first participant under a first (e.g., retail) pricing scheme. The two-tiered electronic market system also includes a second-tier electronic market (e.g., a wholesale tier) that provides a second participant (e.g., a wholesale dealer), different from the first participant, access to the inventory of one or more items in the data repository. The inventory is offered to the second participant under a second (e.g., wholesale) pricing scheme different from the first pricing scheme. Electronic commerce is facilitated using an electronic auction system having at least a wholesale tier and a retail tier by presenting for auction an item description stored in a database operationally coupled to the electronic auction system. The presentation of the item includes a current retail bid amount. A wholesale bid is received from at least one wholesale-tier participant and the current retail bid amount is selectively displaced if the received wholesale bid increased by a predetermined amount is greater than the current retail bid.

50 Claims, 13 Drawing Sheets

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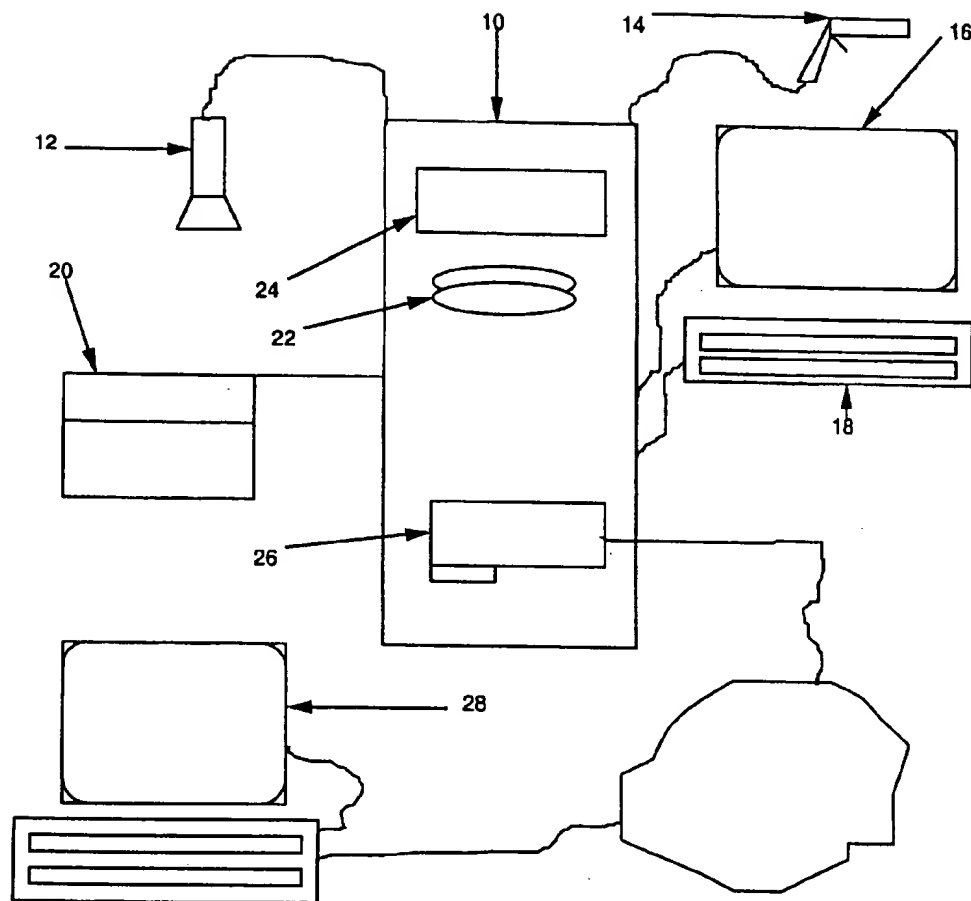


FIGURE 1

FIGURE 2

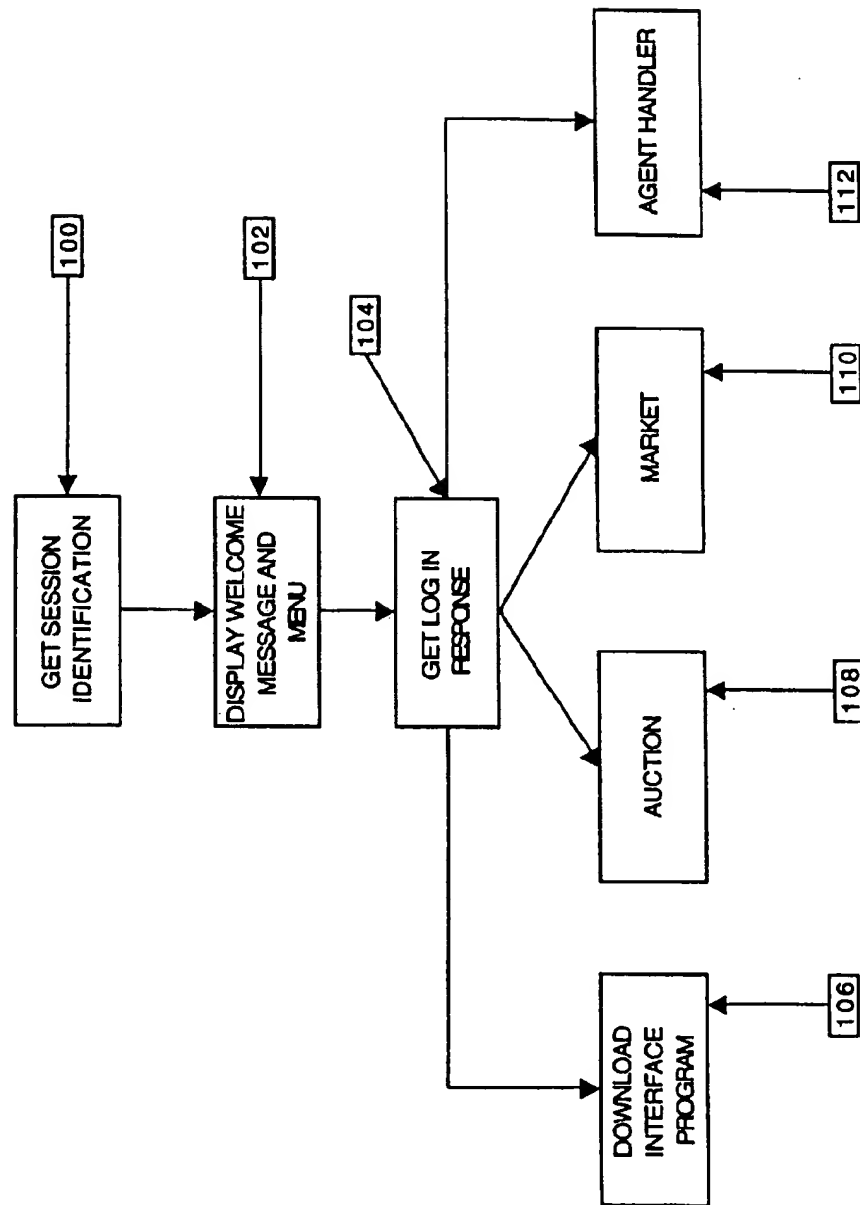
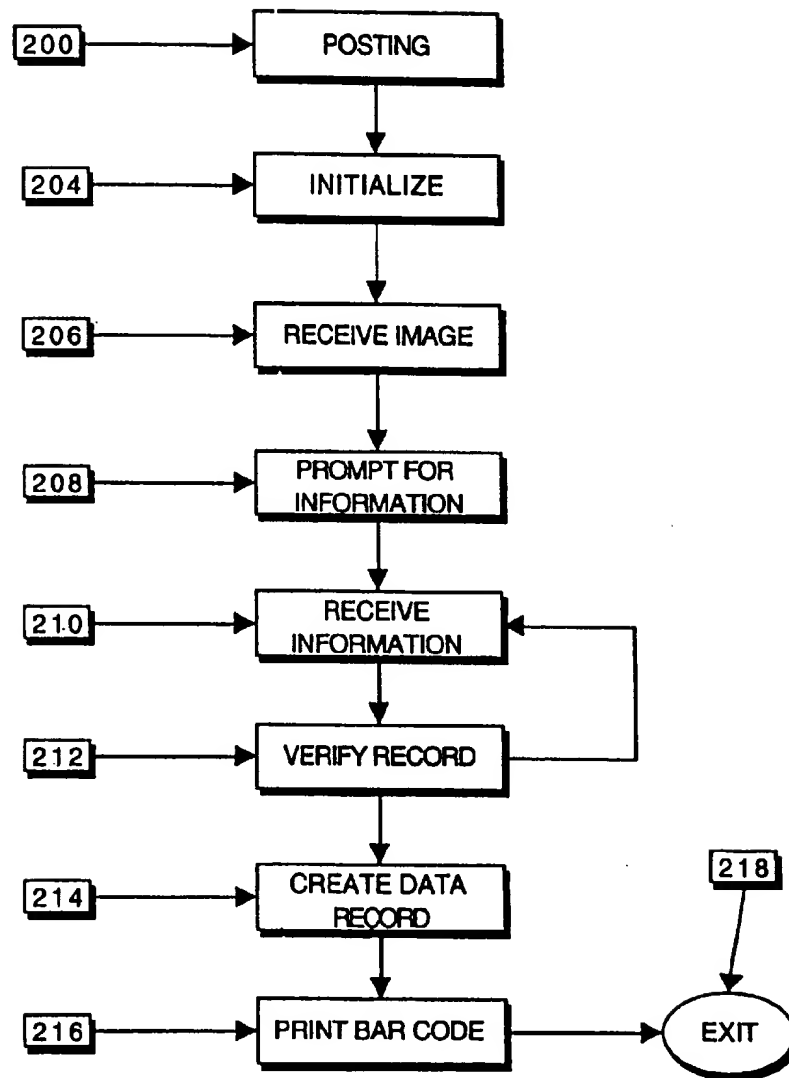


FIGURE 3



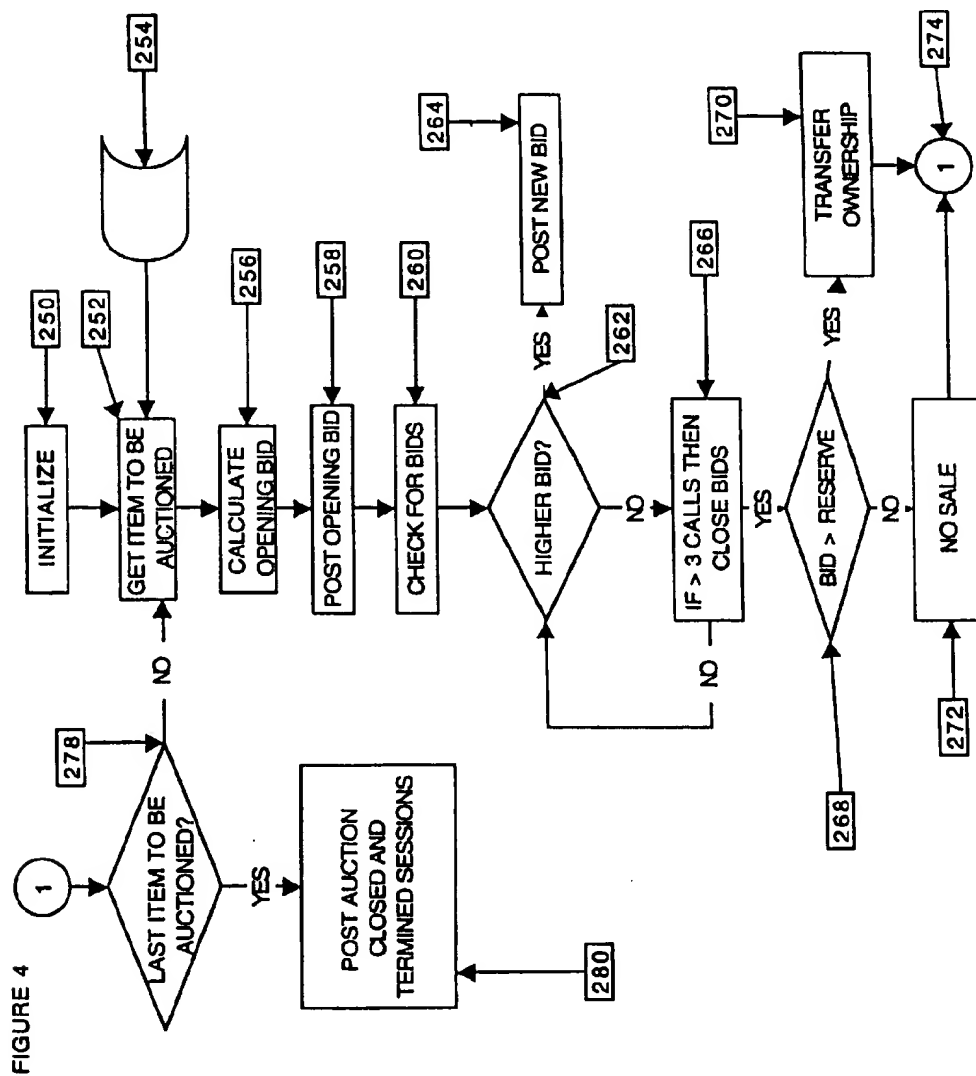


FIGURE 5

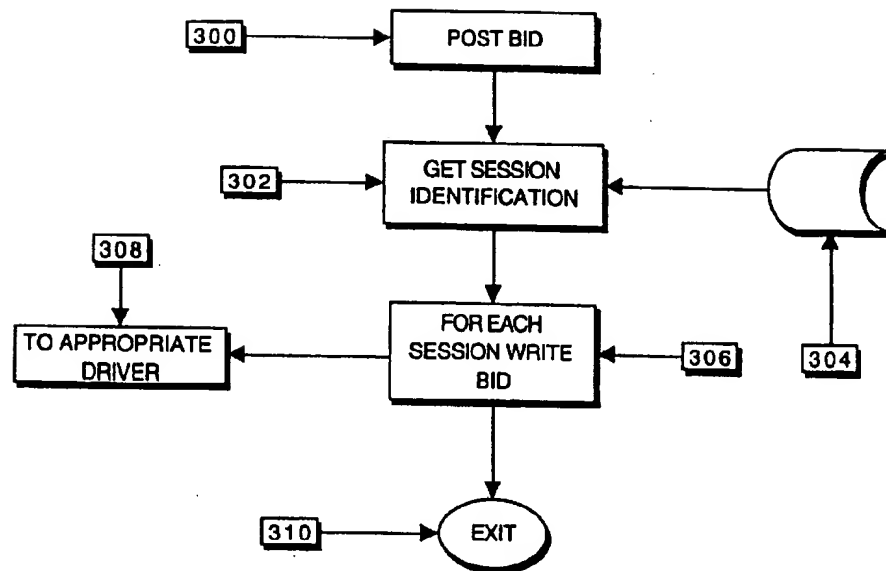


FIGURE 6

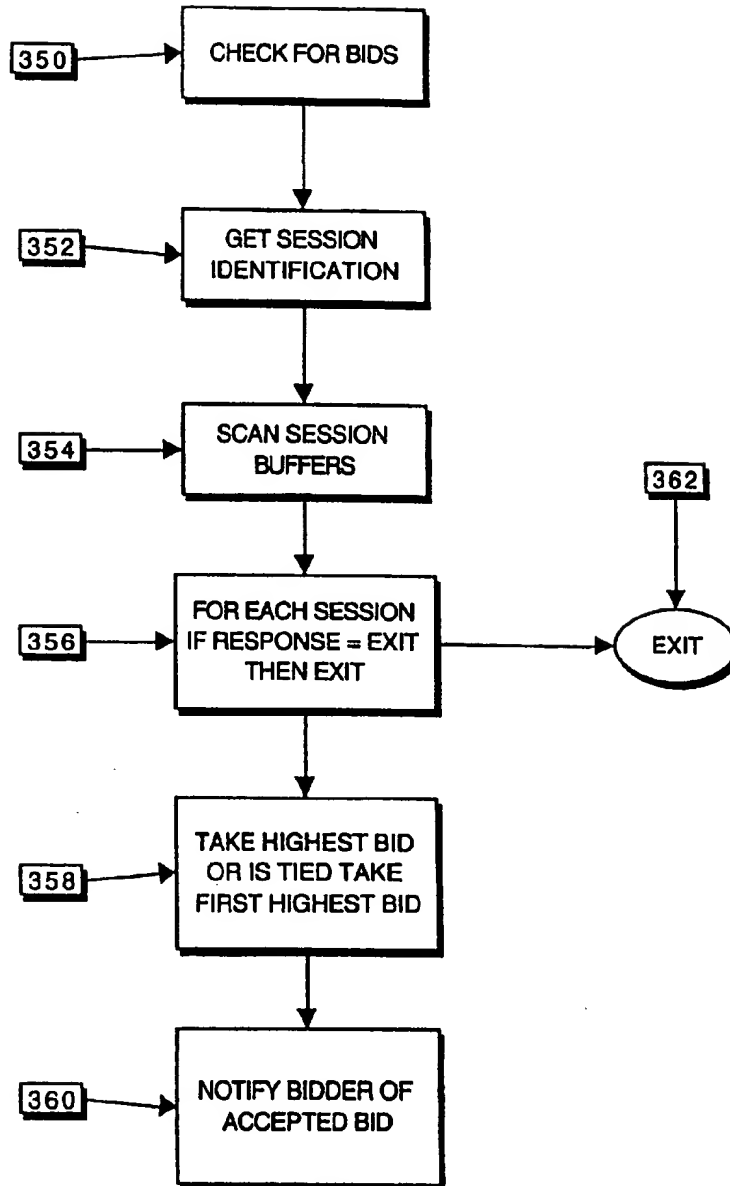


FIGURE 7

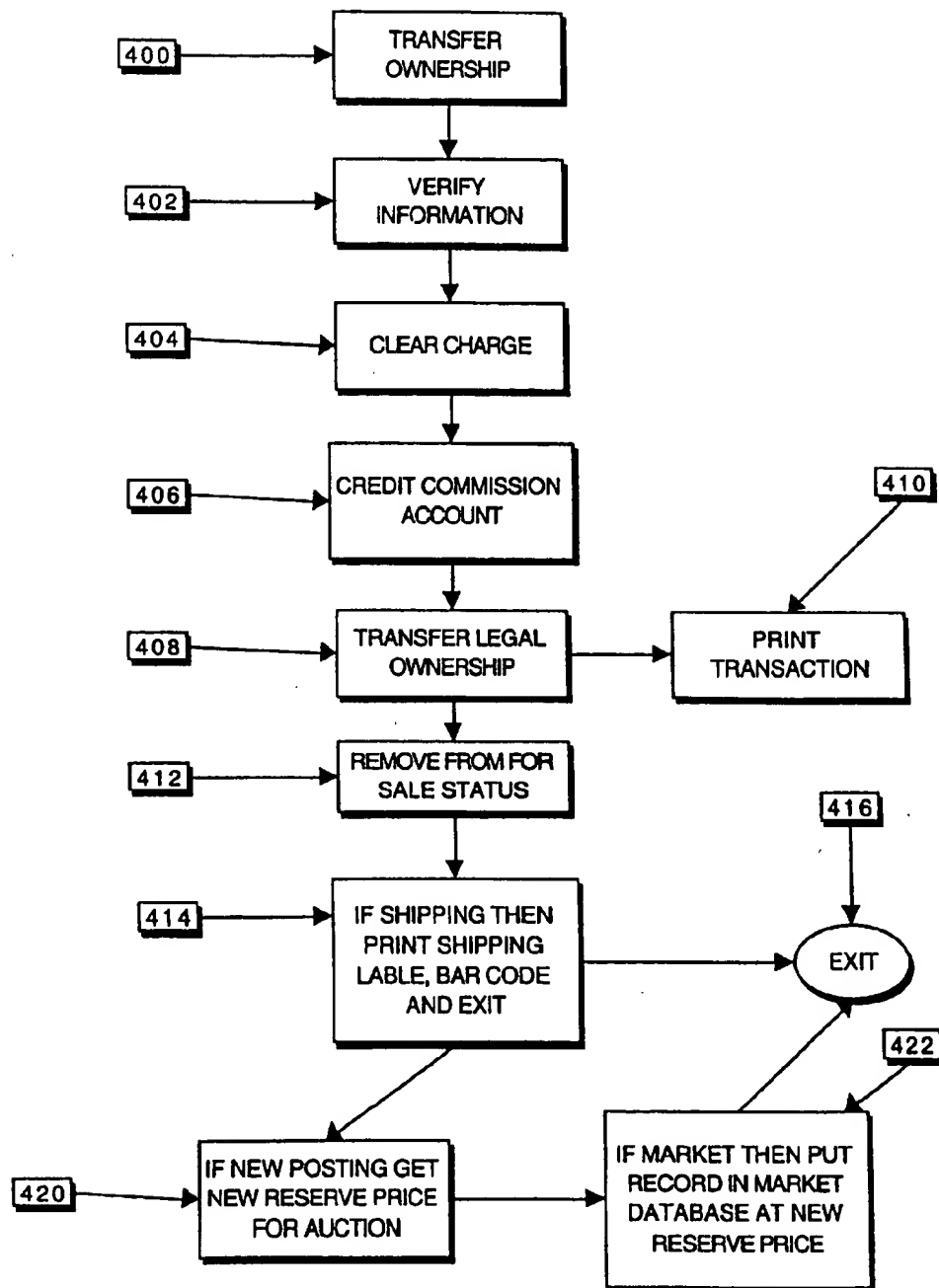


FIGURE 8

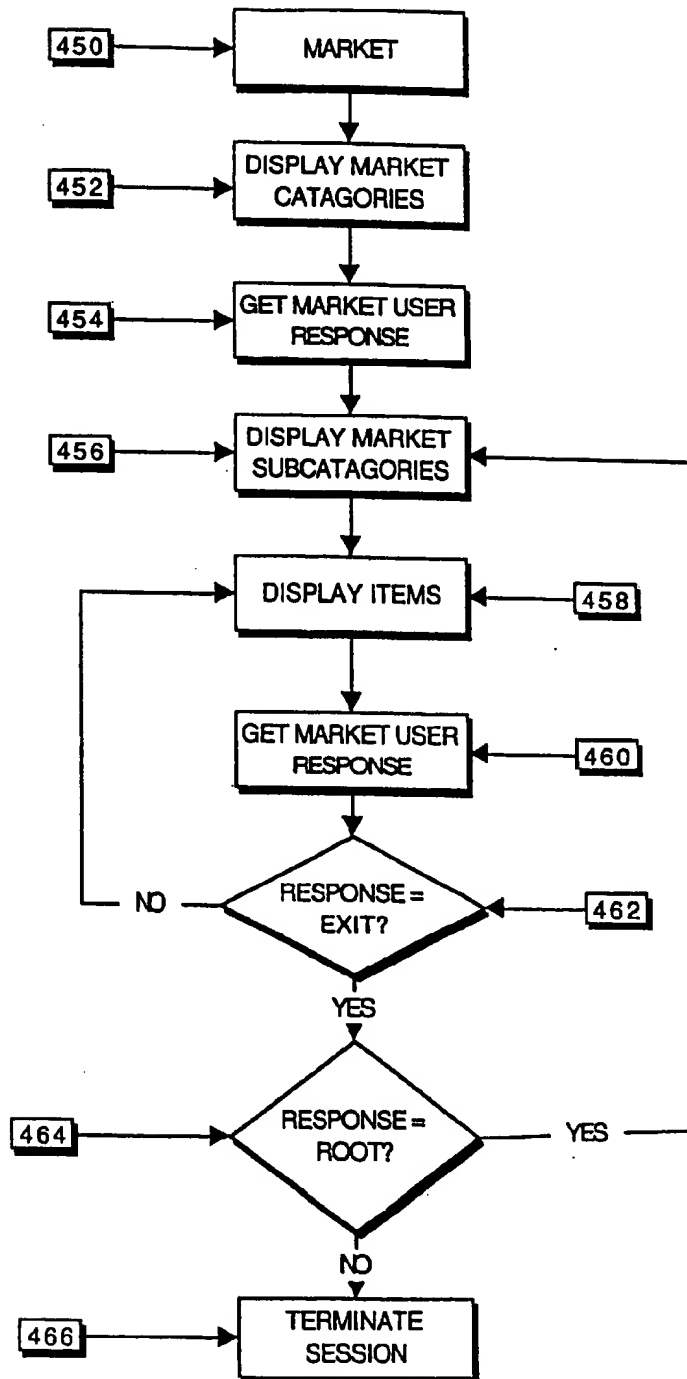


FIGURE 9

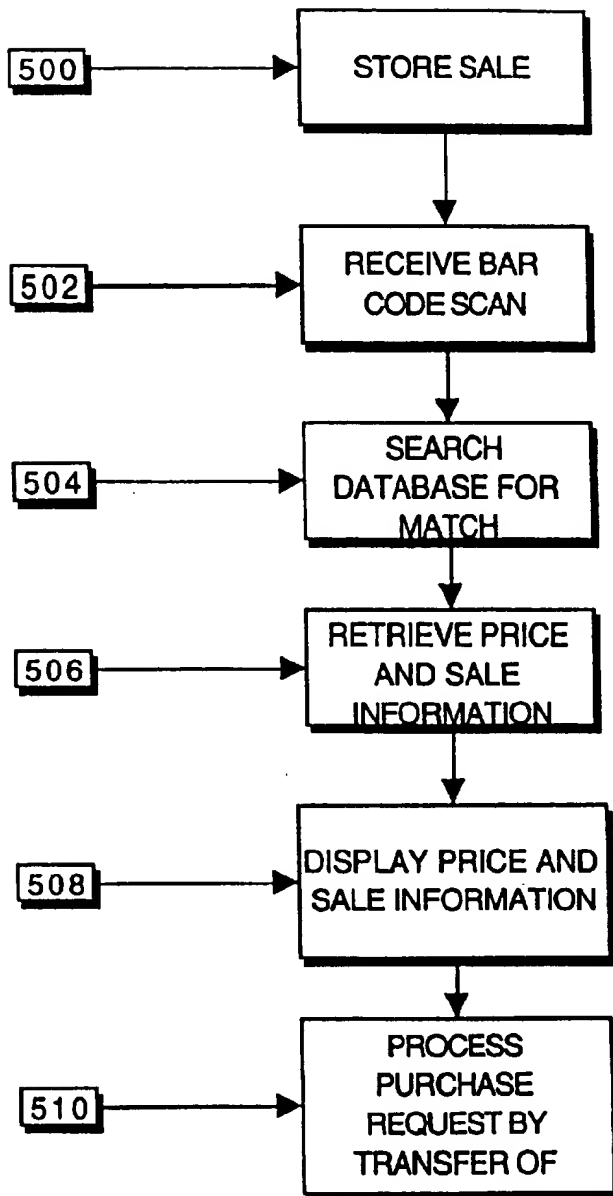


FIGURE 10

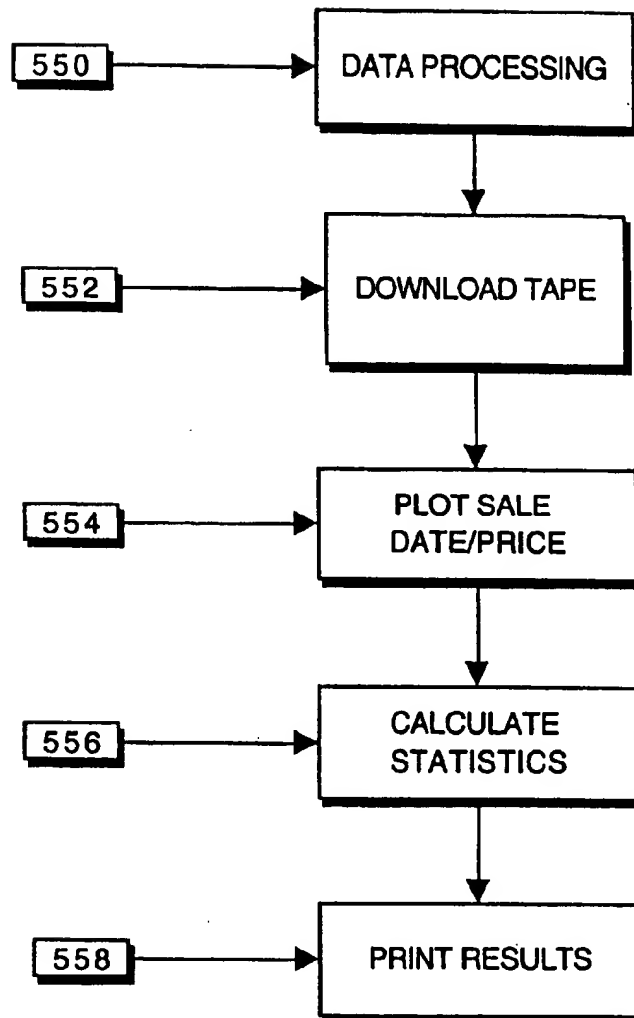


FIGURE 11

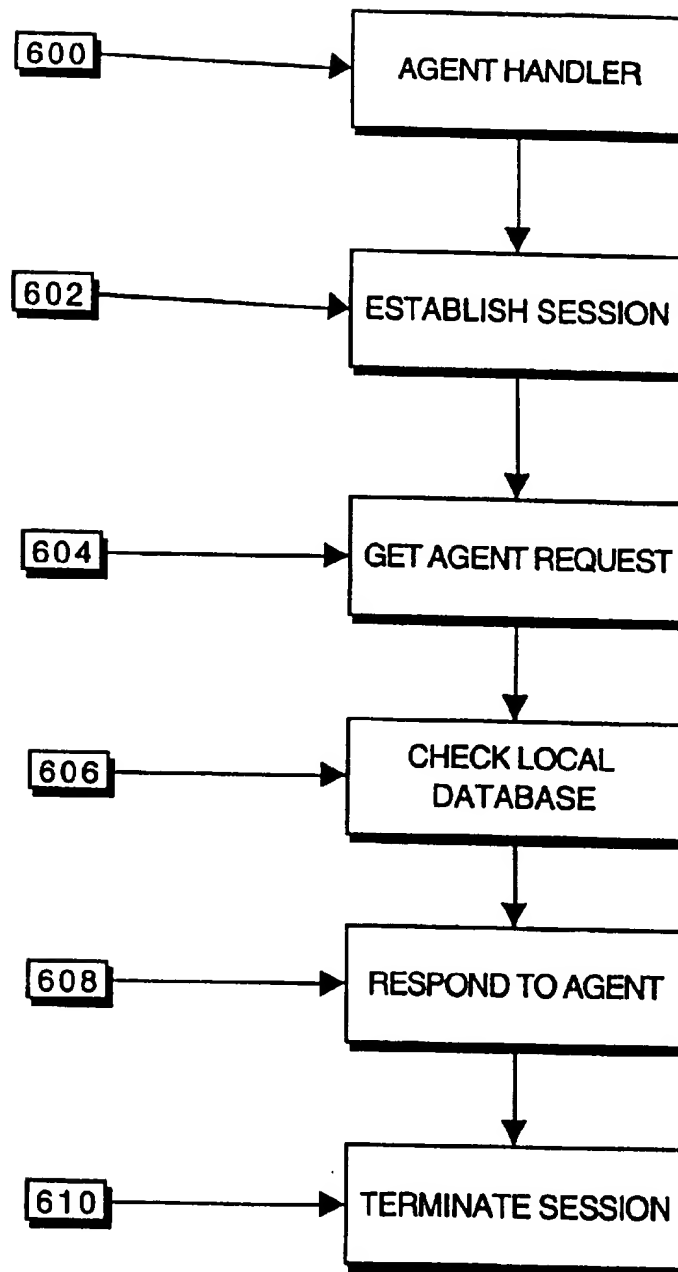


FIGURE 12

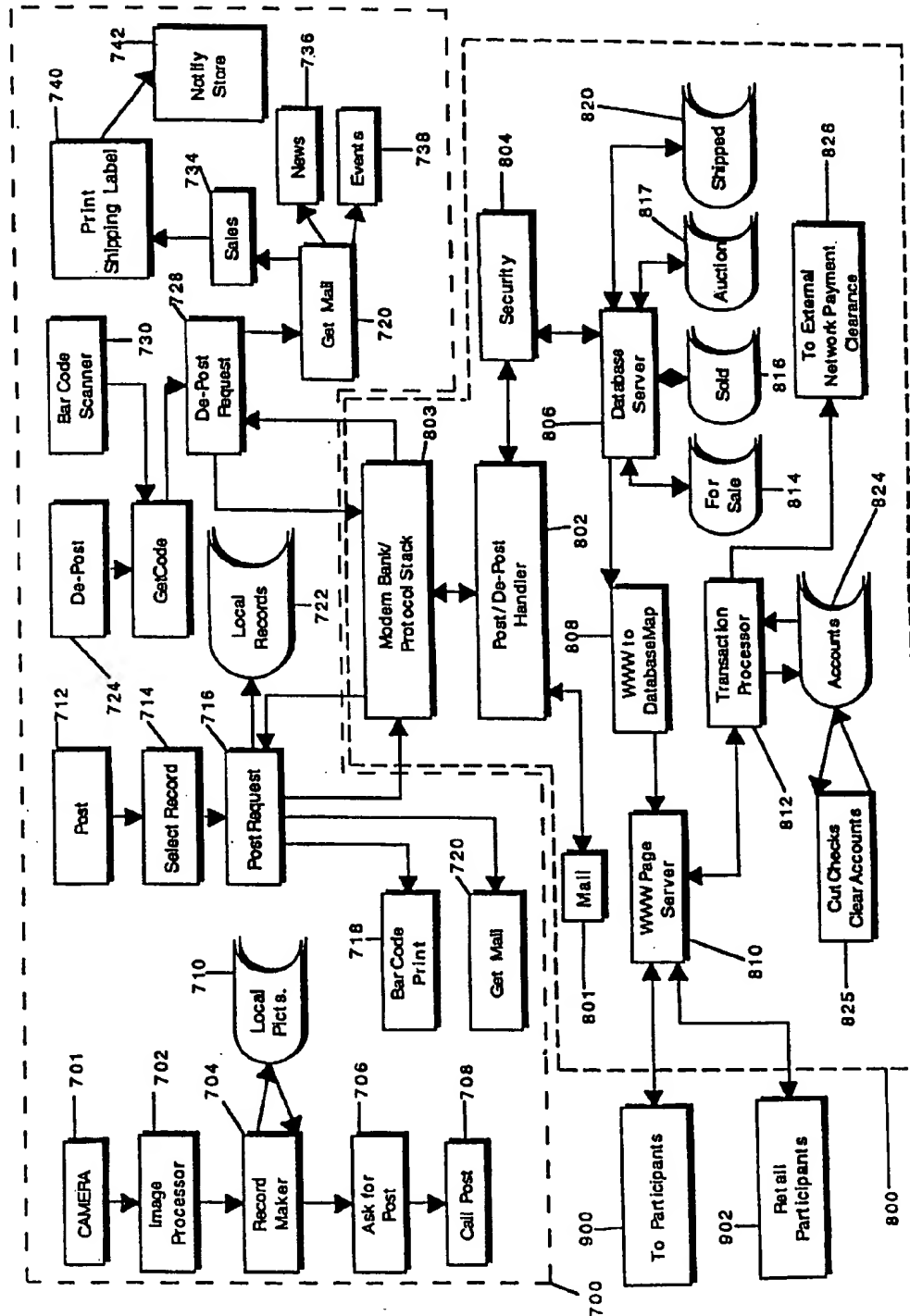
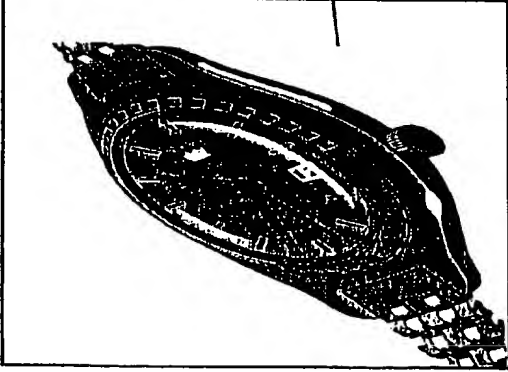


FIGURE 13

926				FLANET - POST/D E-POST			
CAMERA	POST	SALE	DE-POST	FILES	MAIL		
ITEM: 924	9 28	9 22 930	9 32	9 34	940 938		
1974 ROLEX SEA-DWELLER		CATEGORY:			942		
		SUBCATEGORY:			944		
		CODE			946		
		POST DATE			948		
		STORE: TOM'S COLLECTABLES			950		
MARKET:		9 20			952		
DISCRIPTION:					954		
PRICE:		964			<p>This is a mint condition Rolex that was a gift to the previous original owner. Never worn. A gem like this does not come around often.</p>		
\$4,500.00 US		962					
RESERVE PRICE:		960					
\$4,250.00 US		958					

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FACILITATING ELECTRONIC COMMERCE THROUGH TWO-TIERED ELECTRONIC MARKETS AND AUCTIONS

This patent application is a continuation U.S. patent application Ser. No. 09/166,779 filed Oct. 6, 1998, which is a divisional of U.S. patent application Ser. No. 08/554,704 filed Nov. 7, 1995, now U.S. Pat. No. 5,845,265, issued Dec. 1, 1998, which is a continuation-in-part of U.S. patent application Ser. No. 08/427,820 filed Apr. 26, 1995, all of which are incorporated herein by reference in their entirety.

BACKGROUND OF THE INVENTION

The present invention relates to used and collectible goods offered for sale by an electronic network of consignment stores. More specifically, the present invention may be an electronic "market maker" for collectable and used goods, a means for electronic "presentment" of goods for sale, and an electronic agent to search the network for hard to find goods. In a second embodiment to the present invention, a low cost posting terminal allows the virtual presentment of goods to market and establishes a two tiered market of retail and wholesale sales.

Certain items and used goods have a large following of collectors. These items include baseball cards, dolls, pens, watches, comic books, stamps, coins, and the like. It is well known to establish shops specializing in these items. It is also well-known to establish boards for the sale of used goods. And is known to sell new goods on a special television channel like the Home Shopping Channel.

The prior art does not provide a means to electronically market used goods or provide an avenue to allow participants to speculate on the price of collectable or used goods in an electronic market place. Moreover, the art does not show a way for small to medium size business to use a low cost posting terminal in conjunction with a market maker computer to collectively create a virtual market for used and collectible goods. Thus, to address the short comings of the art the present invention has the following objectives:

SUMMARY OF THE INVENTION

To establish a low cost computer means for a used good and/or consignment stores to establish a "trusted" computerized market for used and collectible goods.

To establish a computer means to administrate and provide inventory tracking to used good and/or consignment stores when the stores make a virtual presentment of a good to a computerized market and the good is sold at the virtual market and/or the good is sold through the store front.

To establish a computer means to double tier a computerized market for goods, where the first tier is a retail price and the second tier is a wholesale or dealer to dealer price and an authorized dealer has pre-approved access to the dealer-to-dealer price and may charge and display the retail price to a local store customer.

To establish a computer means for archiving records of transactions in a computerized market for collectible and used goods and distributing the archive to computer terminals that may then research and analyze valuation and price trends of collectible and used goods in the computerized market.

To establish a computer means for a used good store or consignment store to sell used goods and collectibles electronically and to provide the automatic electronic resale of goods purchased.

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To establish a market for goods with a dominant electronic "market maker" node to allow collectors to speculate on the collectable goods market.

To provide the excitement of a "live" auction house type atmosphere to remote participants in a electronic auction.

To provide data analysis to the market makers of collectable good or consignment node users on the price, price movements, and quantity of collectable goods in the virtual market.

To provide an electronic agent interface for participants to search a plurality of consignment nodes to search for a used good or collectable item.

To provide a means to track down the owner of a particular used or collectable good.

Further, to provide a trusted network of consignment nodes that act as brokers to provide a means to electronically present a used good or collectable to an electronic market.

The foregoing objects and advantages of the invention are illustrative of those which can be achieved by the present invention and are not intended to be exhaustive or limiting of the possible advantages which can be realized. Thus, these and other objects and advantages of the invention will be apparent from the description herein or can be learned from practicing the invention, both as embodied herein or as modified in view of any variations which may be apparent to those skilled in the art. Accordingly the present invention resided in the novel methods, arrangements, combinations and improvements herein shown and described.

The present invention is a network of consignment nodes and a low cost easy to use posting terminal for the virtual presentment of goods to market. A consignment node is a computer database of used goods preferably operated by a used good, collectable shop keeper or a bailee. A posting terminal is a low cost easy to use computer and computer peripheral devices used by a small store owner to present goods to a computerized marker and track the sales of goods and control the posted inventory. All consignment nodes users or operators, hereinafter users, are "trusted" licensees or franchisers of the software and hardware necessary to create and operate a consignment node. Thus, the network provides a trusted means for consignment node users, e.g. shop keepers, to establish electronic markets for collectable goods, establish electronic auctions, establish a means for searching each others shops to locate hard to find collectibles items, and a means to electronically present goods to a market. The present invention will allow, or license, certain consignments nodes to become a dominant market maker for a particular class of goods, for example, a consignment node franchise may be given the rights to establish the dominant market for collectable antique pens. It is understood, a central market maker computer may be virtually divided into different markets with posting terminals used as the means for the market to obtain virtual title goods. Other consignment nodes, after taking physical possession of a good, may make an electronic presentment of that good to such a dominant consignment node market. Thus, a local collector of antique pens may bring a pen to a convenient consignment node in Smalltown, USA, the consignment network would allow this collector to electronically "present" his pen to the dominant market make node for antique pens in for example, Chicago. Participants, e.g. customers and collectors (hereinafter "participants"), may reach a dominant node's market, or any other consignment nodes electronic store, from his or her home by logging on from a PC located at the participant's home to their locally operated consignment node and reaching the distant con-

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signment node through the network of consignment nodes. Thus, each consignment node user, e.g. shop keeper, has a potential participant, i.e. customer base, of all consignment node participants. In other words, a potentially huge customer base that incurs the minimal cost of a local consignment node connection may reach any other consignment node through the consignment node network. And local collector's may economically participate in the collectable markets by using local access to a convenient consignment node "trusted" bailee, and electronically presenting collectable goods to an electronic market.

A consignment node in a simple form may have a computer 10, a digital camera 12, a bar code scanner 14, a display 16, a printer 20, a keyboard 18, a database 22 and a network connection 26 collectively called hereinafter a consignment node. The present invention also has a user interface application program to execute an a user or participant's data terminal 28.

The consignment node may have four modes of operation: a software download mode, an auction mode, a market mode, and an agent mode. The software download mode allows a participant to log into the consignment node and receive a download of a participant interface application program. The auction mode allows a participant, from the participant interface application program, to log into a consignment node to partake in an electronic auction. The market mode allows a participant with the participant interface program to log into a consignment node to browse the consignment node database to search for a used or collectable good. The agent mode allows a participant to log into a consignment node to formulate a search request for a particular used good or collectable. The consignment node may search its own database for the requested good and/or generate agents to search and report back a search request of other consignment nodes.

The present invention may allow a participant to electronically purchase goods from a consignment node and to select whether the good should be shipped to a participant designed location or the participant may take electronic legal ownership of a good and post a new participant defined offer or reserve price. By the interaction of a plurality of participants buying and selling collectibles on a consignment node, posting "buy at" and "sell at" quantities and prices the consignment node may establish a market or become a "market maker" for collectable goods. A participant may also elect to electronically transfer or present a good to a different consignment node or market. This allows a participant to speculate with collectable goods on the consignment node network's different markets and not incur the shipping costs with physically moving the goods, while providing a trusted means to assure potential buyers of the good's bona fide availability and legal title.

The consignment node operator or purveyor, hereinafter referred to as the consignment node user, establishes his consignment node by creating a database of used goods or collectibles, hereinafter the term "goods" shall be used to reflect used goods, new goods and collectibles. The user takes the first good to be put on the database and invokes the consignment node software to create a data record. For example, the user owns a baseball card collector shop and the user wants to post his Babe Ruth collection. The user in this instance invokes the consignment node to "build the database mode" and the invention initializes the digital camera 15. The user then "photographs" or digitizes the image of the particular Babe Ruth card. The consignment system then displays an empty database record on the display to accept text information concerning the card.

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The user fills out the display record with information concerning the particular Babe Ruth card. The consignment node verifies that enough information has been filled out in the displayed computer record, as well known to the electronic database arts, and accepts the record. It should be noted that the consignment node database record has data fields for the consignment node user to add value to his consignment node postings with subjective information such as condition of the card, special features such as autographed by Babe Ruth, and the like. Thus, the consignment node user may build business goodwill into his particular consignment node operation by establishing his own particular subjectivity and quality standards in item postings.

After the data record or the particular Babe Ruth card is accepted by the consignment node the system may print out a bar code label on the printer 20. The user may then put the particular Babe Ruth card into a plastic bag and affix the bar code label to the bag. The bar code labeling system becomes a useful inventory management tool discussed below.

It is understood in this first example that the consignment node user is the legal and equitable owner of the Babe Ruth card and that the user posted a reserve or offer price on the particular card at his posting. In a second illustrative example, a local resident would like to post, for example, his Frank Robinson baseball card. The resident brings his Frank Robinson card to the baseball card store and tells the consignment node user he would like to offer his Frank Robinson card for a consignment sale. Again, the consignment node user invokes the system database posting mode and "photographs" the Frank Robinson card with digital camera 12. As above, the user fills in the system generated display prompt for information concerning the Frank Robinson card. The resident informs the user of the reserve or offer price and signs or agrees to a consignment contract with the consignment node user to accept the consignment terms to pay the consignment node user on the sale of the card, for example 6%, of sales price as a consignment fee. Again, the system may print the appropriate bar code for the Frank Robinson card. The consignment node user then takes possession of the card and may affix the bar code label to an appropriate cardholder. It should be noted by the consignment node user may again "add value" to his consignment node by entering subjective criteria in the database entry for authenticity, condition, special attributes and the like. The participant or local resident may now electronically present his Frank Robinson card to any consignment node, consignment node auction or consignment node market maker in the consignment node network.

These processes may be repeated again and again to establish a substantial database of goods for sale. It should be noted that the consignment node user may at his discretion take postings from reputable dealers or collectors via a facsimile machine or other forms of electronic or verbal presentment of a good for sale. It is within the sound discretion of an individual consignment node user to establish these practices. It is within the scope of the invention, however, to take electronic postings from other consignment node users or individuals over the network, as discussed below. Each consignment node user may be a franchisee of a central franchiser and the franchiser may police the network to give quality control, detect fraud and revoke the franchises or licenses of poor quality consignment node users. Thus, the consignment node is a "trusted" network for consignment node users providing value to the network by imposing a quality and performance structure on the consignment nodes. The same franchise enforcement scheme is also available to the low cost posting terminal embodiment to the present invention.

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The Sale

A buyer, hereinafter participant, may electronically log onto a consignment node via a network connection by use of a PC with participant interface software, through an interactive television application, workstation, internet browser or the like. The network connection drivers for the consignment node are discussed in detail below. The participant may enter the browse node and peruse the consignment node database of goods. It is understood that the participant may receive the image taken with a digital camera 12 of the goods at the participant terminal. The participant, upon finding for example the above-posted Frank Robinson card may decide to purchase the card. The participant may present electronic payment to the consignment node by entering a credit card number and expiration date or other forms of electronic payment. It is understood that a secure and/or encrypted means may be established between a participant's interface application and a consignment node to transfer sensitive or theft prone information. Moreover, a participant may establish an account with his local consignment node to be debited and credited with the funds used and generated with his transactions.

The consignment node may, for example, clear the transaction by charging the participant's charge card account and crediting the consignment node store account by well-known credit card clearing techniques. After the consignment node has cleared the transaction the system electronically transfers ownership of the Frank Robinson card to the participant. The participant may then be presented with the choice of directing the delivery of the Frank Robinson card to a desired location or may choose to post a new reserve or offer price for the card and direct the card to remain in the possession of the consignment node user. Thus, the consignment node allows a participant to speculate on the price of the Frank Robinson card and establishes an electronic market for the Frank Robinson card. It is understood that the consignment node may have many Frank Robinson cards available, thus by the interaction of collectors electronically buying and selling the collectibles it will establish a market price for a Frank Robinson card or any other good. For each transaction, the consignment node user extracts the small consignment fee, e.g., 6% of the sales price, thus the consignment node user directly benefits from operating a reputable consignment node. If the participant elects to take delivery of the purchased goods then the consignment node may track the delivery and ownership of this good to this particular participant in a data record. This data record may be useful to speed the posting of the good, should the participant later decide to re-post and sell the good, and it also creates a valuable database of records to track the possession and ownership of a collectable. This feature may be useful in the agent mode, e.g., tracking down very hard to find items, discussed more fully below.

The Auction

For a rare good, a good in a volatile market, or a good's initial posting the consignment node user or participant may wish to auction the good, with or without reserve, to the highest bidder. In this mode, the good may be posted on the consignment node by the means described above but the data record representing the good is identified as waiting for an auction date and may not be purchased on the electronic market. Alternatively, an item may be in the electronic market of the consignment node with a high reserve price that may be lowered in the auction or liquidation mode. Here the consignment node user or the good's participant owner

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may enter a protected data field a confidential reserve price for the auction mode. The consignment node user arranges by invoking the appropriate consignment node program a time and date for an electronic auction. The consignment node user or good's participant owner may establish, in a data record that represents the good, a desire for the item to be auctioned. For example, a pawnshop operator of a consignment node may have several Rolex watches he wishes to auction with reserve this Saturday night at 7:00 p.m. The consignment node user, here a pawnshop, identifies on the Rolex watch records the auction date and the confidential reserve price. The consignment node system may "advertise" auction dates, items and auction terms in the consignment node log on welcome message discussed below. Moreover, a good that is identified as awaiting an auction date may be viewed before auction in the consignment node browse mode by a perspective auction participant.

At the auction date, perspective participants log onto the consignment node auction mode locally or through the consignment node network and await the first good to be auctioned. It is understood that in the best mode of the invention the participant will have a data terminal with a digital to analog converter such as a "sound blaster" and speaker, the digital to analog capability may be used in the auction mode to bring the aural excitement of an auction, e.g., the call of the heckler, the caller and bidders, home to the auction participant. This is discussed in more detail below.

The consignment node takes the first item to be auctioned and posts the image of the good and the good's text record to the participants. The consignment node then posts the opening bid. It is understood that the bid postings may be in a protocol that invokes the generation of an auctioneer's voice at the participant terminals. The participants may then respond with a higher bid. The consignment node mode scans electronically the participants for bids and accepts the highest bid. If bids are tied the consignment node may take the first highest bid by the participants log on order. A particular bidding participant receives a special acknowledgment from the consignment node that her bid was accepted. The consignment node then posts the higher bid to all the electronic auction participants. The consignment node repeats this process until no higher bid is received for a predetermined amount of time and closes the auctioning of that particular good. The consignment node then checks whether the highest bid received is greater than the reserve price, if appropriate. The consignment node may then post sold! and the sell price to all participant terminals and proceed to post the next item for auction. Again a successful purchaser may elect to direct delivery of the good or post the good on the electronic market at a new participant determined offer price.

It is understood that the terms of the auction sale are posted and agreed to by the participants before allowing a participant to bid on goods in compliance with local requirements and statutes. It is also understood that a participant may make electronic payment for the goods or establish a line of credit or collect on delivery terms within a particular consignment node user's discretion. This may be established by a relationship between a local consignment node user and a local participant at the local consignment user's discretion.

It should be noted that a consignment node user may sell virtual advertising space or a central master node e.g., the franchiser, may coordinate the sale of advertising space on a pool of consignment nodes to reach target market participants. For example, if a participant has purchased or specu-

lated in antique pens, and advertisers of an antique pen specially consignment node wishes to target market individuals on the network who have purchased collectable pens in the past. A central coordinated master node may sell advertising to an advertiser for the log on message or e-mail targeted participants and users. Thus, the network of consignment nodes can establish a market for target marketing or blanketed advertising of goods and services sold locally or on a network level by a central node.

The Agent

The Agent Mode allows a consignment node participant to search a plurality of consignment nodes and purchase records for a used good. A participant may log onto his local consignment node to shop. This participant, for example, may be interested in purchasing a particular used coin for her collection. The participant may invoke a consignment node Agent to search the network of consignment nodes for this coin. The participant fills in the search parameters for this coin, for example, a 1872 U.S. penny from the Denver Mint. The consignment node Agent task handler verifies the Agent form is sufficiently filled out and accepts the task. The Agent checks a list of other consignment nodes network addresses kept by the local consignment node database and generates an Agent communication message to each consignment node on the list and begins to establish communications to the other consignment nodes. An Agent message between consignment nodes begins by coordinating or reconciling the database on each consignment node of the locations and/or address of other consignment nodes. If a consignment node has a different list of consignment nodes in its database it will pass the node update information to the other consignment node. The consignment node originating the Agent task will generate a new Agent task to accommodate the information concerning the new consignment node. Once the consignment node database of consignment nodes is reconciled, the Agent will search the consignment node database for the goods requested. The Agent will report back whether the search of the local market database was successful and how many good that matches the Agent search request it found. An Agent may also search the consignment node database of past transactions to identify an owner of a particular good. The Agent may then report that John Doe of Main Street, U.S.A. was the last known purchaser of a 1872 U.S. penny from the Denver Mint at this node. It is understood that differing levels of privacy are available to consignment node purchasers, so as only allowing the local consignment node user to view past purchaser information and/or provide the Agent with an option of contacting that consignment user so he may contact the prior purchaser, thus, protecting privacy while allowing bona fide offers to reach the prior purchaser in confidence.

Once some of the Agents start reporting back to the Agent originating consignment node, the originating consignment node may report the results to the consignment node participant of the Agents' results. Such results may give the total number of matching items found thus providing the local participant/collector an indication of the depth of this market. It is understood that a local consignment node user may charge participants for Agent requests.

Computer Implementation

In the preferred embodiment of the present invention a consignment node may use a multitasking operating system such as UNIX, OS/2, NT or VMS. However, a Microsoft DOS or Windows implementation is within the scope of the

present invention. The consignment node may be networked via TCP/IP and the internet or a private TCP/IP network or X.25 private or public network or service providers network of ISDN, ATM and the like. It is understood, that a consignment node may support a plurality of protocols simultaneously. Moreover, it is understood that the participant interface application program may execute on a wide variety of platforms such as PC's, MAC's, Power PC's, workstations, cable set-top boxes, video game hardware and the like and are within the scope of the present invention. The posting terminal embodiment is discussed in detail below.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows the consignment node of the present invention may have a computer 10, a data storage device 22, a tape drive 24, a digital camera 12, a bar code scanner 14, a display 16, a keyboard 18, a laser printer 20, and a network connection 26. A participant user terminal is shown at 28.

FIG. 2 shows a schematic block diagram showing the logic flow of a user log in at a consignment node.

FIG. 3 is a schematic diagram showing the logical flow of the consignment node auction process.

FIG. 4 is a schematic diagram showing the logical flow of the consignment node market or browse mode.

FIG. 5 is a schematic block diagram showing the logical flow for posting a new used good on the consignment node.

FIG. 6 is a schematic diagram of a subroutine that may be used to post auction bids.

FIG. 7 is a schematic diagram of a subroutine that may be used by the consignment node auction process to receive participant auction bids.

FIG. 8 is a schematic diagram showing the logical flow for a subroutine that may be used to transfer ownership of an item.

FIG. 9 is a schematic diagram showing the logical flow for a consignment node in-store sale of a good.

FIG. 10 is a schematic diagram showing the logical flow of post-processing and analyzing consignment node sales.

FIG. 11 is a schematic diagram showing the logical flow of the consignment node Agent handler subroutine.

FIG. 12 is a block diagram of the posting terminal to market maker computer connections.

FIG. 13 is a diagram showing a user interface on a posting terminal or consignment node.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

It is understood that the get session identification procedure 100 is a routine that monitors the communication ports and virtual communication ports residing on protocol stack. The consignment node may use, for example, a X.25 interface card, available from Eicon Corporation or Frontier Corporation to execute an X.25 protocol stack in a PC workstation. The get session identification 100 program may monitor the X.25 protocol for incoming calls. If the program identifies an incoming call it may answer the call by transmitting the appropriate X.25 packet to the network on the appropriate virtual channel. It is understood that other protocols, such as TCP/IP, DECNET, SNA and ATM are within the scope of the present invention and that multiple protocol stacks may simultaneously execute in a consignment node. Therefore, the get session identification program 100 may have multiple instances to connect and monitor the

various protocols. After the get session identification 100 has appropriately answered an incoming call to the consignment node, it may invoke the display welcome message and menu routine 102.

It is understood that the get session identification 100 provides sufficient information to the display welcome message and menu 102 to allow the display welcome message and menu 102 to connect to the appropriate session or virtual channel. At this juncture, if the participant is using an approved interface program, the interface program will send a predetermined code to indicate its version and other characteristics of its display driver. If a participant is logging in from a TTY terminal or other terminal the display welcome message and menu 102 may detect this information and send the appropriate TTY welcome message. This procedure may also be used to identify features and languages supported on various internet world wide web browsers. It is understood that the welcome message is viewed by the consignment node user as virtual advertising space that may be sold by the consignment node user or coordinated with the master control node (discussed in detail below). The participant may respond to the display welcome message and menu 102 program by giving an appropriate log on response 104. The get log on response 104 may verify and grant a level of access privileges to the participant. It is understood that the consignment node user may require the get log in response 104 to retrieve a credit card number, pin number, user ID and the like, to grant access privileges. If a participant is using a TTY terminal those sessions may be shunted to the download interface program (DIP) 106 routine to receive an appropriate interface program from the consignment node. The DIP 106 may present a list of choices as to what version interface program should be downloaded, such as DOS, Windows, UNIXMAC platforms and what transfer program is desired such as Kermit, Xmodem, FTP and the like. A participant with a participant interface program may also elect to receive a new interface program from the DIP 106. It is understood that an older, no longer supported interface program participant may be shunted to the DIP 106 to receive a new interface program.

A participant with a supported interface program may select the auction 108, market 110 or agent handler 112 sections of the consignment node. If a participant selects auction 108 the participant may be presented with a menu of auction selections such as auctions in session, future auction times, dates, locations and topics, and auction preview. If a participant selects auctions in session the participants' session is passed to the appropriate auction handler, as discussed below. If a participant selects future auctions the participant will be given a list of future auction times, dates, terms, locations and topics of auctions on this and other consignment nodes. It is understood that these displays represent a virtual advertising opportunity for the consignment node user and the advertising space may be sold by the consignment node user or by the master control node. If the participant selects the auction preview, the auction process 108 passes the participant session to the market session 110 with data that indicates an auction preview desired by the user.

If the participant selects the market 110 choice the participant is given a menu of markets that the participants may browse, discussed further below. If the participant selects the agent handler 112 the participant may be provided with an electronic form to create a search for a good. The participant may then execute this Agent's search request to search the network of consignment nodes databases to look for the desired goods. The Agent is discussed more fully below. The

Agent Handler 112 also receives incoming calls from other agents to process the external agents search request on the consignment node. The participant interface and consignment node participant functions are discussed in detail below. It is understood that the agent may also function between virtual markets on a market maker computer and with the transaction archive database discussed below. The discussion now turns to the operation of the consignment node by the user.

FIG. 3 shows a logical flow diagram of the steps the consignment node may use to create a database record of a good for sale or for auction.

The consignment node user may invoke the consignment node program to enter the posting 200 mode to create a data record for the good. The posting 200 mode initializes 204 the consignment node to receive information on a new good. The initialization 204 step displays a data record with data fields on the consignment node terminal for the user to fill in information on the good. The initialization step 204 also initializes the consignment node peripheral devices such as the digital camera 12 and the printer 20. The consignment node user then "photographs" or digitizes the image of the good from one or more perspectives as well known to the digital camera arts. The consignment node receives the digitized image(s) at receive image 206 step. The consignment node program then prompts the consignment node user for information on the good 208. The consignment node receives information 210 that the consignment node user inputs to the data record displayed at step 208. The consignment node program verifies 212 that the necessary information, such as owners name, reserve price, market or auction designation is in the data record. The verify step 212 will reject the record and return the consignment node user data entry mode 210 if the record does not have the minimum information. If the record is verified 212 as complete enough to commit to the consignment node database, a data record is created 214 and linked into the consignment node database. The consignment node program then generates and prints a bar code 216 that indicated the data record. The bar code system is used by the consignment node to maintain an accurate inventory and is a hook for local sales (discussed below). The posting routine may then exit 218 and return from the posting program. By repeating the posting routine of FIG. 3 the consignment node user may build a database of goods for the consignment node market, auction and/or agent searches.

FIG. 4 shows the logical block flow diagram of the processes the consignment node may take to execute an auction. It is understood that the consignment node user may manually invoke the auction process, or may schedule the consignment node to execute the auction process. The auction process begins by initializing 250 the data structures, records, queues and the like to conduct the auction process. The connection between the auction process and auction participants is discussed below. The auction process gets the first item to be auctioned 252 from the database of goods to be auctioned 254. The consignment node then calculates the opening bid 256 by a predetermined formula such as 50% of the reserve or general solicitation of an opening bid is posted to the auction participants 258. The consignment node auction mode then scans the participants for a higher bids 262. If a higher bid is found the new bid is posted 264. It is understood that the steps of checking for bids 260 determines if the bid is higher 262 and posting the new higher bid 264 is repeated until no higher bids are received. After the typical auction closing of going once . . . twice . . . three times the auction is closed 266. The

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consignment node auction program then compares the highest bid received with the good's reserve price 268 to determine whether to transact the sale. If the highest bid is greater than the reserve price the consignment node auction process posts sold! for xxx amount to the auction participants and calls the transfer ownership subroutine 270, discussed further below, and transfers the ownership of the good. If the highest bid is less than the reserve price the consignment node auction process announces no sale! 272 to the auction participants. The auction process then proceeds 274 to get the next good to be auctioned 278. The consignment node auction process is then repeated until all the goods to be auctioned have been run through 278. The consignment node auction may then close and terminate the participant sessions 280. It is understood that the transfer ownership 270 sub-routine may require time to clear the transaction and, therefore, may be best implement as a spawned child process to the auction process. This will keep the consignment node auction executing at an exciting and fast pace for the participants. The consignment node auction process itself may execute in several instances to provide simultaneous auctions on a consignment node. Thus a consignment node may conduct several simultaneous auctions on several virtual runways. It is understood that in the auction mode the consignment node and the participant interface software may communicate using a protocol that allows the consignment node auction driver to "point to" locations stored in the participant interface software, to cause the participant interface software to generate the sound of a auctioneers voice on the sound blaster, or equivalent board. Thus, the present invention uses pre-stored sound samples of different auction prices and auctioneer "string" along aural calls inside the participant interface software, and allows the generation of said pre-stored sound bites to be invoked by the consignment node driver through the said special protocol. This method greatly reduces the bandwidth necessary for a consignment node to support the generation of exciting auctioneers calls at a plurality of participant terminals. It is understood that the generation of an audio bit stream from the consignment node to the participant terminals is also with the scope of the present invention.

FIG. 5 shows the logical flow for the post bid subroutine 300. The post bid sub-routine may be invoked from several consignment node processes, those specifically described thus far are the post opening bid 258 and posting bid 264 logical processes. The post bid 300 sub-routine is used to communicate between a consignment node and multiple participants. The post bid 300 sub-routine gets participant session identifications 302 from a data record or data structure that contains a list of session identifications of participants who have logged onto the auction sessions. The next step sends the bid passed to the post bid 300 subroutine to each participant session identified in the data structure 306. Bids are posted to each participant through an appropriate driver 308. The driver may be identified for each particular user session. For example, a PC user logged into the consignment node via an X.25 virtual channel may require a host PAD driver in the consignment node to communicate asynchronously to the PC terminal interface application. A network user may require a TCP/IP driver to connect between the consignment node and the participant networked terminal. After communicating the bid to participants through the appropriate device driver 308, the post bid sub-routine may exit and return 310 to the calling routine.

FIG. 6 shows the consignment node subroutine to check participant sessions for bids during the auction mode. Check

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for bids 350 maybe a subroutine called by the auction program to scan for bids. It is understood that when a participant logs into the consignment node and selects the auction mode, (see FIG. 2), the participant's session identification is passed to a data structure. The data structure maybe used by the check for bids 350 sub-routine to correctly identify participants at a particular virtual auction. As noted above, the consignment node may support multiple simultaneous auctions, therefore, may require multiple instances of the aforesaid data structure. The check for bids sub-routine 350 opens or connects to the appropriate data structure storing or holding participant session identifications who are participating in the check for bids calling auction program instance at the get session identification step 352. The buffers associated with each session is scanned for an input 354. If a participant has input an "exit" command or symbol 356 the routine removes that participant's session identification from the auction identifying data structure and allows the participant to exit 362 the auction. The participant's session identification may be returned to a data structure that allows the participant to return to the consignment nodes main menu, see FIG. 2, or terminate the participant session. The subroutine then compares the bids and takes the highest bid 358. If bids are tied for the highest bid the sub-routine may use the first received bid and reject the others 358. The sub-routine then notifies the participant session who had the highest bid 360. It is understood that the take the highest bid step 358 and notify bidder step 360 are aware of the current bid price for a good and will not allow a lower bid to be accepted. It is understood that the participant session buffers are flushed after they are scanned to remove old or latent bids. The check for bids sub-routine then returns to its calling routine.

FIG. 7 shows the transfer ownership routine 400 that may be used to transfer the ownership of goods and collectibles in the consignment node. The transfer ownership sub-routine may be called from several consignment node modes and processes to effect the transfer of legal ownership. The first step in the transfer ownership sub-routine 400 may be to verify a participant purchaser information 402. It is understood that the consignment node may use a variety of well known authenticating procedures to verify a participant, such verification techniques include personal identification numbers (PINS), passwords, call back, and a plethora of encryption techniques and personal information identification means to provide a reliable verification technique. It is understood that a consignment node user may have established a credit or deposit account for the participant from past sales or the transfer of funds and the verify step 402 may connect the participant to the account. The clear charge 404 step is used to clear the participant consignment node transaction. It is understood that this may be via an external credit card clearing network, a connection to a credit account, or though one of the many proposed electronic fund transfer schemes such as debit cards, e-money, and clearinghouses. After the transaction clears the charge 404, the consignment node credits the consignment node users commission account 406 to extract the consignment node transaction fee. The consignment node then transfers legal ownership 408 of the good by changing the ownership entry in the data record in the consignment node of the good. The consignment node may then print a record of the transaction 410. It is understood that step 410 may also be used to keep a log on the consignment node storage or tape drive. The consignment node then removes the good from sale or auction status 412. It is understood that the data record representing the good is "locked" during the transfer

ownership sub-routine to prevent collisions of actions and transfers of the good. If the participant has elected to ship goods then the consignment node will print a shipping label 404 for the consignment node user to attach to the good for shipment. The transfer ownership routine may then exit 416. If the participant has elected to re-post the good or collectable the participant may specify a new reserve or offer price for the good or collectable. It is understood that the purchasing participant may elect to leave the good or collectable at the consignment node and post a new offer or reserve price and may identify that the good is on the market, e.g. may be bought and sold at any time, or that the good is awaiting an auction date. Moreover, the participant may elect to have the good viewable on the market or "invisible" to the market while awaiting an auction date 422. It is understood that the participant may elect to leave the good at the purchased consignment node and electronically transfer the offering of a good to another consignment node. It is understood that consignment node users may run a "trusted" network between consignment nodes to provide the trust between merchants, that the goods exists and that the network between the consignment nodes to provide for electronic presentation of a good is a secure network connection. This allows collectable goods to be concentrated for a single electronic auction or virtual collectable market on a market maker consignment node without incurring the costs of shipping the goods to a central location to bring the good to the market maker consignment node. It is understood that the trusted posting of goods on a market maker node is a value added feature a small town consignment node user can provide to his immediate collector community. It is understood that the master central node may also serve as a legal consignment node franchising authority to provide enforcement of integrity, security and quality control for the consignment node network.

FIG. 8 shows the consignment node routine that may be used to establish a virtual market. The market 450 may be selected from the consignment node main menu, see FIG. 2, to allow a participant to browse the consignment node goods database. The market 450 will display to the participant market categories 452, categories may be defined by the consignment node user to reflect the specialization of his consignment node and the specialized markets or miscellaneous markets for his goods. The consignment node then gets the participants response 454 to the market choices. The consignment node may then display market sub-categories 456. Again, the consignment node user may specify market sub-categories to reflect the specialization of the consignment node. The consignment node may then display items 458 and get the participant or market user response 460 to the displayed choices. It is understood that the participant may browse or scroll through the goods on the market 462, 458, 460 until the participant responds with a desire to exit the market 463. If the response is a desire to transfer to the market root directory 464 then the consignment node will return the participant to the market subcategories 456. If the participant responded with a desire to terminate the session 466 the consignment node will exit the market and terminate the participant's session. It is understood that during the browse loop 458, 460, 462 a participant may elect to buy or make an offer on a good and may invoke the transfer ownership routine, see FIG. 7, to effect the transfer of a good's ownership. It is also understood that a participant may make an offer on a good below the asking (or offered) price. Such a proposed offer may be stored by the consignment node and used to notify the good owner. The good owner may then accept the counter offer or reject. It is

understood that a participant counter-offer may be made subject to an acceptance before date. It is also understood that a participant may establish a "buy at" or "sell at" price/quantity for any good in the market.

FIG. 9 shows a logical flow diagram of the process that may be use to transact the transfer of ownership of goods on a consignment node at the store where a consignment node may be located. The consignment node user invokes the store sale sub-routine 500 from a consignment node user terminal, see FIG. 1. The consignment node user may use the bar code scanner to scan the bar code of the good for sale 502. It is understood that the consignment node user may manually recall or search the consignment node database for the data record of the good or may let the consignment node software use the bar code to automatically retrieve the record 504. The data record is then scanned to retrieve price and sale information on the good 506. It is important to note that a good, while on display at a consignment node user's shop may have transferred ownership and changed price via network participants. The consignment node then displays this information 508 at the consignment node user terminal. The store customer may then elect to purchase the good. The consignment node may process a store customer purchase request by calling the appropriate sub-routine to transfer ownership, see FIG. 7, of the good.

FIG. 10 shows a logical process diagram for the central node to collect and process data concerning transactions on a plurality of consignment nodes and provide value added feed back to consignment node users on market positions and trends. Data processing 550 may be executed on a consignment node or the central node to extract transaction data from a consignment node. It is understood that the tape drive, or storage device may be used to log network transactions on the posting, auctioning, buying and selling of goods and collectibles on a consignment node. This information may be collected by the central node over the consignment node network. The central node may then plot sales, sale date, price over time and the like to create graphs of market performance 554. It is understood that the data correlation and processing steps 554, 556 may be customized to provide a particular consignment node user with useful market information. The central node may also provide hard copies or electronically transfer the information to the consignment node users. It is understood that this may be a value added feature of a service that may be provided by a franchiser. It is understood that the central node may log into a consignment node, with well known remote processing and data transfer techniques such as the logon and FTP UNIX utilities to make changes to the aforesaid virtual advertising space on a consignment node.

FIG. 11 shows the agent handler the consignment node may use to establish agent-to-agent and consignment node-to-consignment node connections to process participant agent requests. The agent handler 600 may be entered by a predetermined series of codes and verification procedures to verify a request for an agent connection to the consignment node is from a bonafide agent and a bona fide consignment node. Once this is verified the agent handler may establish a session for the requesting agent 602. The requesting agent may then transfer its agents request to the consignment node 604 and the consignment node may then check its local database 606 to try to match the agents search request. The agent handler may then respond to the agents request 608 and terminate the agent session 610.

A second embodiment to the present invention, shown in FIG. 12, uses a low cost portable "posting" terminal to allow the virtual presentment of goods to market. The posting

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terminal has a digital camera, a bar code printer, a bar code scanner, a modem and posting terminal software. The posting terminal works in conjunction with a market maker computer. The market maker computer has a database of goods for sale, a posting/de-posting communication handler, a database to world wide web (www) mapping module, a www server, a transaction process, a posting terminal communication manager, a sold database, a shipping database and an account database and has much of the functionality of the previously described consignment node.

The posting terminal and market maker computer functional block diagram is shown in FIG. 12. The posting terminal has a camera interface 701, and image processing module 702, a record maker module 704, a storage unit 710, for storing images and records that have not been posted, a post module 712, a select records module 714, a post request module 716, a print bar code module 718, a get mail module 720, a storage unit for holding posted records and return codes 722, a de-post module 724, a get code module 726, and de-post request module 728, a bar code scanner interface 730, another instance of the get mail module 720, a mail sales routine 738, a print shipping label routine 740, a notify store routine 740, and a check sales module 734. The posting terminal 700 contacts a market maker computer 800 to check sales, to post goods, to de-post goods and to receive mail. The posting terminal 700 is easier to administrate than a consignment node because it behaves like a retail point-of-sale terminal to manage goods that have been posted and are locally sold. The bar code labeling and scanning routines and methods make it easy for the posting terminal user to maintain an accurate account of what goods have been posted, de-posted, sold and/or shipped. The posting terminal may use an MS-DOS or MS-WINDOWS operating system that is much easier for a small store owner to operate and administer than a complex multi-user system like UNIX or WINDOWS NT.

The posting terminal 700 functionality begins with a user taking a digital picture with the posting terminal digital camera and connecting the digital camera to the camera interface module 701. The user selects an icon on a graphical user interface generated by the posting terminal software to pull the digital pictures from the digital camera. It is understood that other input devices such as scanners and the like may be use in place of the digital camera. The image process module 702 may convert the digital picture to a compressed data format such, as JPEG or MPEG, more suitable for communication of the image across a data link. It is understood that the image may keep it's full resolution for posting. The posting terminal then invokes the record maker routine 704. The record maker routine 704 may display the image or allow the user to select an image from storage unit 710. The record maker may display on a posting terminal display a data entry record with pre-defined text fields, number fields, "buttons," knobs and other graphical user interface objects to allow a user to enter data to complete a posting record.

FIG. 13 shows an example of a graphical user interface that may be presented to a posting terminal 700 user. The graphical user interface for the posting terminal 700 may include an image of the item represented by the record 920, a description of the item 922, and 924, the "push button" commands to receive pictures from the digital camera 926, to post a record 928, to clear a local sale 930, to de-post a record 932, to access files of records 934, to view and/or receive and send mail 938, a database category field 940 with a pull down selection bar 942, a database subcategory 944 with a pull down selection bar 946, a code field 948, a

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posting date field 950, a store identification 951, a market designator field 954, a description field 956, a reserve or wholesale price field 958, and identifier 960, a retail or full price field 962 and identifier 964. The category 940 and sub-category 944 data fields are restricted to selections that can be made by the respective pull down bars 942 and 946. This aids the posting terminal operator in selecting the correct market for the good when creating a record and assures that all records can properly link into a market computer 900 market database. A file may be stored at posting terminal 700 that corresponds to database structure at the market maker computer 800. Having the database structure in a file at posting terminal 700 may allow the posting terminal to receive updates by remote file transfer techniques, such as the KERMIT, FTP, xmodem and ymodem protocols. It is understood that certain selections from the market category 940 and subcategory fields may be "greyed" or that is blocked from selection by a posting terminal 700 user to enforce a franchise and/or license grant that only allows posting in a certain field. This may allow a franchising scheme that restricts a franchisee to a field of use and/or category of goods. The code field 948 displays the bar code data in text form that the market maker computer 900 sends to the posting terminal 700 when a record is successfully posted. Therefore, the code field 948 can serve as a quick visual confirmation to the posting terminal user that the displayed record has been posted. The market field 952 may also be a restricted selection field accessible by pull down selection bar 954. Fields selectable by the market field 952 may include auction, onsale, hold and the like to give additional directionality to the record posting. The price 964 and reserve price fields 958 may be used to structure the two-tiered market of dealer-to-dealer and retail markets. The reserve price identifier 960 and reserve price field 958 may be hidden from view to retail participants. A dealer may be provided with special logon identifications and passwords to view the reserve price 958 and reserve price indicator 960. This feature encourages franchisees to use the electronic market for collectable goods dealer participant interface to generate local sales.

The posting terminal 700 user enters descriptions such as the name of the item, the sale price of the item, and a brief description of the item and the like to compose a record. It is understood that a posting terminal user may enter a retail price and a wholesale price. The retail price may then be displayed to participants 900. Other retail participants 902 may receive the wholesale price. It is understood that this two-tiered pricing scheme may be used to network retail store owners to provide additional incentives for the retail participants to use the network to locate goods and generate sales at the retail point of sale. For example, a retailer may charge the retail price for goods to store customers, while obtaining the benefits, e.g. the profit margin of wholesale or discounted pricing for goods. It is understood that the restricted fields are coordinated with the structure of the For-Sale database 814 to guide a posting terminal 700 user in the proper selection of a market category and subcategory of the posting of a good. Categories may include jewelry, rugs and tapestry, tools, quilts, furniture, art deco, books, pens, coins, stamps and costumes and clothing. Subcategories may include painting and drawings, sculpture, vintage clothing, costumes, shoes, bags, hats, wedding gowns, furs, rug types and the like to structure the database. The user may also select from a list box what category and sub-category from restricted fields in which to post a good. Referring back to FIG. 12, the user may store a composed record on the storage device 710. The record maker routine may also

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contain a command button 706 to immediately post the record 708. It is understood that the user may designate a time at which the posting terminal 700 may automatically contact the market maker computer 800 and post the selected goods. The post request 716 module may allow a user to select records from storage unit 710 or as in the case where the user selected the immediate post command 708, the post module 712 may accept a record as an input. The ability of the posting terminal 700 to store and select records for posting asynchronously from when a record is created allows a user to compose records when the posting terminal is isolated from communication with a market maker computer 800. The post module 712 may invoke the post request module 716 to post the designated records on the market and make a virtual presentment of a good. Rules and procedures may be imposed on the posting terminal 700 user through licensing and franchise agreements. Such rules may include the requirement that all goods posted must be in the physical and legal possession of the posting terminal franchisee or licensee, that legal possession of a good may be obtained by lawful ownership or through a franchise approved bailment or consignment contract. It is understood that these rules and legal frame work may be imposed to allow the posted record to convey a legal title to a good such that the ownership designated in the record grants lawful ownership to the good designated by the record. The post request module 716 may use a communication package and protocols to transfer the records to the market maker computer 800. Communication libraries are packaged and are commercially available from WCSC 2740 S. Dairy Ashfor, Suite 188, Houston Tex. 77077 and from Marshallsoft Computing, Inc. at P.O. Box 4543 Huntsville, Ala. 35815. The communication protocols such as FTP and KERMIT may be enhanced by using known encryption and authentication techniques to provide an ultra-secure posting interface. The posting record may also include a header that identifies a store identification, user identification, passwords and the like to allow the market maker computer 800 to verify authenticity, approve authorization and track usage of the posting terminal 700 by a particular posting terminal 700 and posting terminal user.

The market maker computer 800 may verify and accept a record and generate and send a unique bar code number for each record. The bar code number may contain a code that identifies a posting terminal 700. The posting terminal accepts the bar code and places the code in the appropriate record. The unique code generated for each successfully posted record may serve as confirmation that a good has been successfully posted. The record may then be stored on storage unit 722 as a confirmed posted record. When the posting terminals' post request module 716 is finished, the posting terminal 700 or the market maker computer 800 may invoke a mail update routine 720 to pass mail from the market maker computer 800 to the posting terminal 700. Mail topics may include sales information 734, network news 736, and notification of upcoming events 738. The de-post module 724 may use the bar code scanner 730 to receive a posted collectible's identification code. The de-post module 724 may call the de-post request routine 728 to establish communications between the posting terminal 700 and the market maker computer 800. The de-post request module 728 sends the item br collectible bar code to the post/de-post handler 802. The post/de-post handler 802 may remove the collectible identified by the bar code from the for-sale database 814, if the de-posting terminal identification has legal title to the identified collectible as indicated in a for-sale record, the market maker computer 800 may send a de-post confirm code to the posting terminal 700.

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The posting terminal 700 may process the confirm signal by indicating that the de-posting procedures was performed. If legal title to the posted collectible good does not belong to the de-posting requesting entity, e.g., the de-posting terminal 700 then indicated by the posting terminal identification, the market maker computer 800 may report the collectible good status, e.g., sold!, to the de-post request module 728. This may indicate to the posting terminal user that a bailee relationship now exists between the store and the new legal owner. It is understood that this bailee relationship may be contractually created and enforced through the franchise contract between the posting terminal user and the franchise granting authority. It is also understood that the bailee agreement may be for a predetermined time and/or require the posting terminal user to hold a good for a predetermined time and/or ship the good to a long term storage facility to ease the bailee burden of posting terminal users where a participant elects to hold legal ownership but keep the good available in the electronic market place for the long term. It is understood that a bond and/or insurance requirements may be required for the posting terminal user and/or the long term storage facility to provide assurance to a long term collectible investor that the risk of loss of the collectable good asset is maintained or at least hedged against loss. It is understood that a good may have sold and the new owner has elected to re-sell the good at a higher price. In this instance, the de-posting terminal will be advised that the good has been sold and advised of the new sales price. The posting terminal may then transact the local sale at the new price. After the de-post request module 728 is finished it may invoke or the market maker computer 800 may invoke the get mail routine 720 to send mail between the market maker computer 800 and the posting terminal 700. It is understood that through the procedures of generating a unique code for each posted good, checking a unique code that identifies each posting terminal 700 against the legal owner entry in a posted good on the market maker computer 800 the database of for-sale goods 814 will be extremely reliable and accurate and assure that a locally sold goods that have already been sold on the market maker computer 800 will not be inadvertently sold twice. The procedures, when used in conjunction with the rules and procedures imposed on the posting terminal user through a franchising or licensing legal framework assure that (1) when a record of a good is found on the market maker computer 800 by a participant 900 or another retailer 902, it is in fact for-sale and is in the physical and legal possession of a "trusted" franchise and (2) that when a bona fide purchase price is tendered by a participant 900 or another retailer 902 the legal title to a good as represented by the record will transfer to the buyer with an immediate or nearly immediate finality to the transaction. This frame work of trusted franchisee, high confidence and accurate market database, and the legal finality of transaction, where the legal transaction/"cash" clearing function is performed by the market maker computer, e.g., the participant credit card number or other payment means is only revealed and brokered by the market maker computer 800, is a massive step toward building confidence and trust between a small collectable merchant and participant with electronic transactions. These procedures may be used to give assurances and create trust to participants, who for example would like to buy and art deco collectable from a collectable shop in Russia but is very reluctant to send credit card information to an unknown Russian collectable shop for the obvious concerns of credit card fraud and/or fraud in the bona fides of the collectable good itself. Here, however, the franchising authority polices the franchisees to revoke the franchise if a

fraud and/or misrepresentations of the bona fides of a collectable good is taking place by the posting terminal user and the assurance that credit card numbers are only revealed to the market maker computer 800 and not accessible to the, in this example, the Russian collectable store. This allows the Russian collectable store to receive the business good will of the electronic collectable market place of the present invention to establish immediate trust with prospective electronic customers.

The market maker computer 800 may have mail module 801, a post/de-post handler module 802, a security module 804, database server 806, a database to www map module 808, a www page server 810, a transaction processor 812, a for-sale database 814, a sold database 816, a shipped database 820, and an account database 824. A www to database mapping 808 module is commercially available from Expertelligence, Inc., Santa Barbara, Calif. at (805) 962-2558. Such a mapping module may map a ODBC database such as Microsoft Access to a www page. The market maker computer 800 may serve four primary functions. The first function is the call handler for processing calls from a posting terminals 700. The second function is a database to www mapping function to present participants 900 and other retailers 902 with a means to access the market database. The third function is to provide a means to process transactions from participants by clearing a transaction and transferring legal title to a good. The fourth function is to provide a means for managing the notification of the sale of a good to posting terminals 700.

The market maker computer 800 may use an accounts 824 database to track payments due to posting terminal 700 users. The clear accounts 825 module may print checks due to posting terminal 700 users. It is understood that electronic funds transfer techniques may be used for clearing account balances 825 for posting terminal users. A modem bank 803 may be used to receive posting calls from posting terminals. It is understood that the modem bank may be replaced by a network connection to the internet. At this juncture it is believed that an off-line, that is a modem bank, connection offers the best security for the posting of goods. However, it is understood that a network connection, e.g. through the internet, is within the scope of the present invention.

A security module 804 may be used to provide identification and password security. It is understood that other security and authentication techniques may be used at security module 804. It is understood that database server 806 may be an ODBC server available from many commercial database providers. Much of the market maker computers 800 functionality is disclosed above in the consignment node functionality. The databases may be structured to indicate of for-sale 814 database and sold database 816, and auction database 817 and a shipped database 820. It is understood that records may move between the databases by book entry transaction. The transaction processor 812 may use RSA certificates and/or other well-known techniques to process secured transactions between the market maker computer 800 and participants 702 and 902. It is understood that the transaction processor 812 may interface with external payment systems 826. It is understood that participant accounts may be tracked at the market maker computer 800. Moreover, it is understood that account surpluses may be acquired by participants speculating in collectable goods may be invested in highly liquid and safe assets such as U.S. Treasury bills to provide and interest bearing accounting for positive cash balances. This provides an incentive, or at least a hedge against inflation, for a participant to keep funds within the collectable market place and to use these funds to

speculate in the collectible market. By using funds available at the market maker computer 800 participants can reduce the transaction costs associated with credit cards and other transaction clearing means and optimize the participants' return on price movements in the buying and selling of collectable goods. It is within the scope of the present invention to allow access to the electronic collectable market through stock brokers, banks, and other transaction providers through these providers private transaction networks, e.g., those networks that use dial in telephone lines to home computers and/or dedicated data lines. It is within the scope of the present invention to allow professional investment advisors to operate funds such as investment companies, mutual fund partnerships and the like, that use collectable goods as part of the funds assets. It is understood that the market "history" may be archived and provided to investment advisors and/or posting terminal users and/or participants on a CD-ROM or other mass storage medium to allow off-line analysis of trends in the collectable goods market. This will allow or create a new class of "learned" speculators in this unique, novel and non-obvious electronic market place and network of trusted franchisees in the collectable goods domain. It is also within the scope to the present invention to create the liquidity, volume and availability analysis to allow the creation of a secondary and derivative market for option and futures contracts and other speculative constructs to be created with the underlying assets as collectable goods in the electronic market place of the present invention.

Many variations of the present invention are possible once the present invention is known to those skilled in the arts and are within the spirit and scope of the present invention. Those skilled in the arts will be able to make many variations on the present invention once this invention is known to the arts.

Therefore, I claim:

1. A computer-implemented two-tiered electronic auction system comprising:

a data repository storing information corresponding to an inventory of one or more available items;

a first-tier providing a first participant access to the inventory of one or more items in the data repository, the inventory being offered to the first participant under a first pricing scheme; and

a second-tier providing a second participant, different from the first participant, access to the inventory of one or more items in the data repository, the inventory being offered to the second participant under a second pricing scheme different from the first pricing scheme.

2. The system of claim 1 wherein the first-tier comprises one or both of a business-to-consumer electronic auction and a consumer-to-consumer electronic auction and the second-tier comprises a business-to-business electronic auction.

3. The system of claim 1 wherein the first pricing scheme comprises retail pricing and the second pricing scheme comprises wholesale pricing.

4. The system of claim 1 wherein the second pricing scheme is transparent to the first participant.

5. The system of claim 1 wherein the second pricing scheme is unavailable to the first participant.

6. The system of claim 1 wherein the first pricing scheme is visible to the second participant.

7. The system of claim 1 wherein the inventory of one or more items comprises goods or services or both goods and services.

8. The system of claim 1 further comprising another inventory of items available only the second participant.

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9. The system of claim 1 further comprising another inventory of items available only the first participant.

10. The system of claim 1 wherein the first participant comprises a retail buyer and the second participant comprises a dealer.

11. The system of claim 10 wherein the dealer comprises a wholesaler.

12. The system of claim 1 further comprising a plurality of first participants, each of which is offered the inventory of one or more items under the first pricing scheme.

13. The system of claim 1 further comprising a plurality of second participants, each of which is offered the inventory of one or more items under the second pricing scheme.

14. The system of claim 1 wherein the first-tier and the second-tier share the data repository.

15. The system of claim 1 wherein the second participant can add, modify or delete items in the data repository and can specify the first pricing scheme, the second pricing scheme or both.

16. The system of claim 1 wherein the data repository comprises data records, each data record corresponding to an item in the inventory and specifying a first price for the item and a second price for the item.

17. The system of claim 16 wherein the first price comprises a business-to-consumer price and the second price comprises a business-to-business price.

18. The system of claim 1 wherein the second participant has privileges, unavailable to the first participant, that enable the second participant to access the second-tier.

19. The system of claim 1 wherein the second participant comprises a trusted dealer.

20. The system of claim 1 wherein the first-tier and second-tier are implemented on a same computer system.

21. The system of claim 1 wherein the first-tier and second-tier are implemented on separate computer systems interconnected by a network.

22. The system of claim 1 wherein the two-tiered electronic auction system is implemented on a computer system that also hosts an electronic market system.

23. The system of claim 1 further comprising a process that determines whether a participant is granted access to the first-tier or the second-tier.

24. The system of claim 23 wherein the process comprises a login process that grants the participant access to the second-tier if the participant has been pre-approved.

25. The system of claim 24 wherein the login process determines that the participant is pre-approved to access the second-tier if the participant enters a predetermined login ID or password or both.

26. A computer-implemented method of facilitating commercial transactions by providing a two-tiered electronic auction, the method comprising:

maintaining a first-tier electronic auction at a computer system, the first electronic auction comprising items offered to consumer participants under a retail pricing scheme;

maintaining a second-tier electronic auction at the computer system, the second electronic auction comprising items offered to dealer participants under a wholesale pricing scheme; and

linking the first-tier and second-tier electronic auctions through a data repository having data records that represent items concurrently available in both of the first-tier and second-tier electronic auctions.

27. The method of claim 26 wherein linking the first-tier and second-tier electronic auctions comprises maintaining a predetermined fixed rate that determines a price differential between the first-tier and second-tier electronic auctions.

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28. The method of claim 26 wherein the predetermined price differential is established by one or more dealer participants in the second-tier electronic auction.

29. The method of claim 26 wherein linking the first-tier and the second-tier electronic auctions comprises maintaining a price differential between the first-tier and the second-tier, the price differential being established on an item-by-item basis by one or more dealer participants in the second-tier electronic auction.

30. The method of claim 26 further comprising facilitating a financial transaction in the first-tier electronic auction between a consumer participant and a dealer participant, the transaction having finality of transaction.

31. The method of claim 26 further comprising facilitating a financial transaction in the second-tier electronic auction between a first dealer participant and another dealer participant, the transaction having finality of transaction.

32. The method of claim 26 further comprising facilitating a transaction in the first electronic auction between a consumer participant and a dealer participant, the transaction transferring a legally cognizable interest from the dealer participant to the consumer participant.

33. The method of claim 26 further comprising facilitating a transaction in the second electronic auction between a first dealer participant and another dealer participant, the transaction transferring a legally cognizable interest from the first dealer participant to the other dealer participant.

34. The method of claim 26 further comprising:
receiving payment information from at least one participant in the first or second electronic auction, the received payment information being associated with a transaction at the first or second electronic auction.

35. A method for facilitating electronic commerce using an electronic auction system having at least a wholesale tier and a retail tier, the method comprising:

presenting for auction an item description stored in a database operationally coupled to the electronic auction system, the presentation of the item including a current retail bid amount;

receiving a wholesale bid from at least one wholesale-tier participant; and

selectively displacing the current retail bid amount if the received wholesale bid increased by a predetermined amount is greater than the current retail bid.

36. The method of claim 35 further comprising presenting the received wholesale bid increased the predetermined amount as a new current retail bid amount.

37. The method of claim 35 wherein the predetermined amount comprises a percentage of the wholesale bid amount.

38. The method of claim 35 wherein the predetermined amount comprises a percentage of the current retail bid amount.

39. The method of claim 35 wherein the predetermined amount comprises a fixed dollar amount.

40. The method of claim 35 wherein the predetermined amount is determined by a participant who offered the item for auction.

41. The method of claim 35 wherein wholesale-tier participants are presented with the current retail bid amount and with a current wholesale bid amount.

42. The method of claim 35 wherein received wholesale bids are transparent to retail-tier participants.

43. The method of claim 35 further comprising authorizing a wholesale-tier participant to access to the electronic auction using a verification process executing on a computer system.

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44. The method of claim 35 wherein a verification process selectively grants access to the wholesale tier based on login information provided by a participant.

45. A system for facilitating electronic commerce transactions among participants in an electronic auction using a data packet network, the system comprising:

a first data storage location for storing information relating to an item for auction, the stored information indicating at least one of a retail price term for a retail-tier participant and a wholesale price term for a wholesale-tier participant;

a second data storage location for storing a user identification identifying a participant as either a retail-tier participant or a wholesale-tier participant; and

a display process for selectively displaying, depending on the user identification stored in the second data storage location, at least one of the retail price term to retail-tier participants and the wholesale price term to wholesale-tier participants.

46. A two-tiered auction system comprising:

a retail tier in which a bid on an item from a retail auction participant is evaluated based on an amount of the bid received from the retail auction participant;

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a wholesale tier in which a bid on the item from a wholesale auction participant is evaluated based on an amount of the bid received from the wholesale auction participant increased by a predetermined amount; and

a process for differentiating retail auction participants from wholesale auction participants.

47. A method of conducting two-tiered auctions comprising treating received bids differently depending on whether the participant from whom a bid is received is a retail participant or a wholesale participant.

48. The method of claim 47 in which a bid received from a retail participant is evaluated based on an amount of the received bid.

49. The method of claim 47 in which a bid received from a wholesale participant is evaluated as if the received bid was for a higher amount.

50. The method of claim 47 in which, if a wholesale participant wins an auction, an amount owed by the wholesale participant is less than an amount of the wholesale participant's winning bid.

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